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LEEDS
PHILOSOPHICAL AND LITERARY SOCIETY.

THE ANNUAL REPORT
FOR 1867-68.

FORTY-EIGHTH REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL AND LITERARY

SOCIETY,

AT THE CLOSE OF THE SESSION

1867–68.

Read at the Annual Meeting, May 5th, 1868.

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IMPORTANT RULE

RESPECTING THE PROPERTY OF THE SOCIETY.

PASSED OCTOBER 8TH, 1860.

That in the event of a dissolution of this Society, its Property and Effects, whether real or personal, shall not be disposed of for the personal benefit of the Members, but shall be appropriated in such manner for the advancement of Science, Literature, or Art, in the town of Leeds, as shall be determined by a majority of the Members at an extraordinary Meeting to be convened for that purpose. But that no dissolution of the Society shall take place without the consent, in writing, of a majority holding not less than two-thirds of the Proprietary Shares.

FORM OF A BEQUEST TO THE SOCIETY.

Every person desirous of bequeathing to the Society any Sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form :—

I give and bequeath to the Trustees for the time being of the Society established at Leeds, called "THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY," *for the use of the said Society, the sum of* , *to be paid out of such part of my personal Estate as I may legally charge therewith.* [Or here enumerate the Effects or Property intended to be bequeathed]. *And I direct that the Receipt of the Treasurer of the said Society for the time being, shall be an effectual discharge to my Executors for the said Legacy.*

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

FORTY-EIGHTH SESSION.

THE Council have pleasure in being able to report that the numbers of the Society continue nearly undiminished, 51 having withdrawn, and 45 new ones having joined its ranks.

The annual statement of Receipts and Expenditure shows that the financial position of the Society is in a satisfactory state. The Council have again to record the liberal donation of £10 from Mr. Thomas Emsley, of Burley.

The following Lectures and Papers have been read during the past Session :—

1. "On the Food of Man in relation to his Muscular Force." By Lyon Playfair, C.B., Ph.D., LL.D., F.R.S., L. and E., Professor of Chemistry in the University of Edinburgh. Read October 22nd, 1867.

2. "On the Norman Sculptures of Lincoln Cathedral," with Illustrations. By the Venerable Archdeacon Trollope, D.D. Read Nov. 5th, 1867.

3. "On the Dialect of Yorkshire, with Illustrative Reminiscences of Old Yorkshire Life and Manners." By the Rev. Thomas Jackson, Prebendary of St. Paul's, London. Read Nov. 19th, 1867.

4. Second Lecture upon the same subject. Read Nov. 21st, 1867.

5. "On the History of Exhibitions, and the General Results of those of 1851, 1855, and 1862." By Professor Archer. Read December 3rd, 1867.

6. "On the Paris Exhibition; its Leading Features, Social and Scientific, with especial reference to Technical Education." By Professor Archer. Read December 5th, 1867.

7. The Conversazione. Held December 17th, 1867.

8. "On Meteors and Meteorites." By Alexander S. Herschel, B.A., Professor of Astronomy in the University of Glasgow. Read January 7th, 1868.

9. "On Formosa." By Dr. Collingwood, F.L.S., &c. Read February 4th, 1868.

10. "Incidents in the Life of our First Prince of Wales (Edward II.) unrecorded in the Histories of England." By P. O'Callaghan, LL.D., D.C.L., F.S.A., &c. Read February 18th, 1868.

11. "On Man and the Mammoth." By Henry Woodward, F.G.S., F.Z.S. of the British Museum. Read March 3rd, 1868.

12. "The Earth, its Shape, Size, Physical Construction and Changes." By James Stuart, B.A., Trin. Coll., Cambridge. Read March 17th, 1868.

13. "On the Scientific Ideas of the Chinese." By the Rev. T. S. Fleming, F.R.G.S., late of Shaw-King, China. Read April 7th, 1868.

14. "On the Climate and Vegetation of the Tropics." By Alfred R. Wallace, F.L.S., F.R.G.S., &c. Read April 21st, 1868.

15. "On the Animal Life of the Tropics." By Alfred R. Wallace, F.L.S., F.R.G.S., &c. Read April 23rd, 1868.

The Christmas Afternoon Course of Juvenile Lectures comprised—

1. A Lecture "On Mount Vesuvius." By J. D. Heaton, M.D., Vice-President. Read January 9th, 1868.

2 & 3. Two Lectures on "Electricity." By J. Chapman Wilson, Esq., F.C.S., Lecturer on Chemistry at the Leeds School of Medicine. Read January 14th and 16th, 1868.

The Annual Conversazione was held on the 17th December, and attracted a full attendance of the Members and their friends. In the course of the evening, Mr. W. F. Barrett, of the International College, London, gave a short lecture "On Sensitive and Musical Flames," with striking experimental illustrations; and Mr. Edward Atkinson exhibited and described the Structure and Habits of Branchipus Eximius, from mud brought from the Pool of Gihon at Jerusalem. In the various rooms of the Society were displayed, besides a collection of Paintings and Photographs, a series of specimens illustrative of the revived manufacture of Venetian Glass, Mosaics, &c., by Messrs. Salviati & Co.; Photographic Views in Palestine, taken in connection with the Palestine Exploration Fund; an extensive collection of objects illustrative of the Dress, Embroidery, Paintings, Coins, and Carvings of the Chinese, by the Rev. T. S. Fleming; specimens of Old Leeds Pottery, by Mr. W. Walker; Gold and Silver Ornaments of Greek, Italian, and Frankish manufacture, by the Rev. John Gott; and Drawings and Paintings by Messrs. Grimshaw, Sutcliffe, Tootal, and Turner.

The Council have again to deplore the removal by death of another of the earliest Members, Mr. T. P. Teale, Honorary M.D. of Dublin, F.R.S., F.L.S., who joined the Society in its Third Session, in 1823, and ever after took an active part in its affairs, especially in the progress of its Museum. When the enlargement of the Hall was commenced, he not only contributed liberally himself, but canvassed zealously and successfully for funds to carry out the undertaking; and, as President, he opened the first Session in the New Building. At a Special

Meeting of the Council, January 7th, the following resolution was adopted and entered in its minutes:—"That the President and Council of the Leeds Philosophical and Literary Society desire to record their sense of the valuable services rendered to that Institution by the late Mr. T. P. Teale. As a Member of Council, Vice-President, and President, during the period of forty-four years, as author of various original and scientific communications, and finally, as Curator of the Museum, he contributed most efficiently to its prosperity and reputation. Deeply feeling the loss sustained by the scientific Society, in common with the town and district around Leeds, its officers would respectfully convey to Mrs. Teale and her family their sincere condolence and sympathy in the severe bereavement they are now sustaining."

The various departments of the Museum have received considerable additions during the past year.

To the Geological Collection, Lord Dudley and Ward has contributed a very fine slab of Wenlock Limestone, containing numerous interesting forms of Zoophytes and Crustacea. Dr. Griffith, of Church Stretton, has sent a valuable series of Fossils, illustrating the Caradoc Sandstone group of Shropshire. Mr. Masters, of Ludlow, has presented various specimens from the Upper Ludlow Rock and Aymestry Limestone; and Mr. George Hunt, of Evesham, has contributed a very fine Fossil Fish (*Tetragonolepas angulifer*) from the Lias of Worcester; and an Os Calcis of an Elephant, from the Brick Earth of that district. The Council have availed themselves of an opportunity of adding to the Collection numerous specimens from the Red Crag of Suffolk. During the

summer, the Geological Specimens from the Palæozoic to the Mesozoic formations have been named and classified by Mr. J. W. Salter, of London, which enhances the educational value of this part of the collection.

The Zoological Museum has been increased by several important Genera and Species of Mammalia—as the Orang Outan, Ursine Howler, Capybara, Capromys and Nycticebus, by purchases made by the Council. The Society is likewise indebted to Mr. R. B. Turner for a fine specimen of that rare Monkey, the Callithrix Personatus, from Bogota; to the Council of the College of Surgeons, through the intercession of Mr. Flower, for specimens of Balean from Physalus Antiquorum; and to Mr. J. W. Teale, of Scarborough, for an Angel Fish, caught at Scarborough, a genus not before represented in the Museum. The arrangement of the British Lepidoptera has been completed as far as the Noctuidæ, by Mr. Walker Joy and Mr. Frederick Buckton, who have also presented a fine series of specimens of the latter Family. The Geometridæ and smaller groups are still wanting, and these, it is hoped, will be supplied by some other Contributor. To the British Crustacea several additions have been made by the Rev. Thomas Hincks; but this class, as well as the Echinodermata, is still very imperfectly illustrated.

In Comparative Anatomy, three highly important acquisitions have been made to the order Edentata, by the liberality of the members, viz., a mature and perfect Skeleton of the Aard Vark *(Orycteropus Capensis)* by Mr. George Taylor, of Buckingham House; and a Skeleton of the Great Ant Bear *(Myrmecophaga jubata)*, by Mr. Samuel Taylor, of Hyde Terrace; and a Skeleton of the

Hairy Armadillo *(Dasypus Sexcinctus)*, by Mr. C. G. Wheelhouse. The timely acquisition of these important genera enables the Museum to illustrate this peculiar order of animals probably more completely than any other provincial collection in the kingdom.

To Dr. Lingan, of Hereford, the Society is indebted for a Moriori Skull from the Chatham Islands, a race of men now nearly extinct. This singular variety of the Human family was obtained for the Society through the exertions of Mr. Samuel Hey.

The Archæological Collection has received several additions of Stone and Flint Implements, from Denmark, Sweden, and America, partly presented by Mr. Thomas Walker, Mr. Fox, Mr. J. Dixon, and partly purchased by the Society.

The Cabinet of Coins has been enriched by the purchase of Drachmæ and Tetradrachmæ of Alexander the Great, Philip 3rd, and Arsaces the 28th, a Didrachm of Ægina, Gold Coin of Theodosius, and several Anglo-Saxon and English Coins.

The Rev. T. S. Fleming, F.R.G.S., has presented 120 Chinese Coins to the Society, collected during several years' residence in that country; and has also been kind enough to arrange the entire Collection of Chinese Coins belonging to the Society under the several dynasties to which they belong.

Mr. Rickards has presented a portion of a Roman Mural Tablet, found on the line of the Roman Wall near Newcastle.

The Council have pleasure in referring to the Specimen of Mosaic Pavement from Aldbro', which was purchased for the Museum a few years since. This has been made

the subject of an interesting paper by the Historian of *Isurium*, Mr. H. E. Smith, in which he fixes the date as the end of the 3rd, or beginning of the 4th century; and it adds considerably to the value and interest of the Pavement, to find that only *one other example* of Roman Pavement depicting the well-known Legend of Romulus and Remus *is known*, which is in Rome, and also that the configuration of the border is of a rare type in Britain. It is not improbable that this Mosaic has been the production of Roman artificers in this county, as the tesseræ are mostly made of *Blue Lias* and *Magnesian Limestone*, both well-known rocks in Yorkshire.

The Staircase wall has received the additional decoration of three very large and beautiful Photographs of *St. Peter's at Rome*, the *Forum*, and the *Colosseum*, framed and glazed, the contribution of Mr. Robert John Hudson.

The Library continues steadily to increase by the contribution of the Transactions and Reports of various learned Societies at home and abroad. Amongst those presented this Session for the first time, may be recorded The Transactions of the Tyneside Naturalists' Club, from its commencement; The Proceedings of the Philosophical Society of Glasgow, from its commencement; Fourteen Volumes of the Monthly Notices of the Royal Astronomical Society of London; and The Proceedings of the Essex Institute of Science (of the United States).

The Chart of the *daily* Meteorological Observations continues to be exhibited at the Hall. This would be considerably improved if the *velocity* and *force* of the wind could be registered by one of Crossley's Anemometers,

which the Committee trust will be added to the instruments by purchase or presentation.

The annexed is a summary of the results derived from the monthly averages for the past year:—

1867.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January	35	29·414	1·968
February	44	29·679	1·294
March	37	29·561	1·530
April	48	29·408	2·175
May	53	29·626	1·565
June	58	29·780	1·635
July	59	29·561	2·615
August	63	29·643	2·290
September	57	29·725	1·625
October	49	29·569	1·666
November	42	29·972	1·000
December	40	29·655	0·221

The greatest degree of heat, as indicated by the Thermometer in the Sun, was 110 on the 27th of June; greatest in the shade 90, on the 13th of August; and minimum 14° on the 2nd of January.

The greatest Barometric pressure was on the 2nd of March, being 30·470, the temperature of the Mercury being 55°; the least pressure was on the 8th of January, being 28·350, temperature of Mercury 48°.

The greatest fall of rain was on the 15th of August, being 1·210.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY,

FROM JULY 1st, 1867, TO JUNE 30th, 1868.

RECEIPTS.

	£.	s.	d.	£.	s.	d.
To Balance in Bankers' hands	92	1	1			
,, ,, Curator's hands	25	10	0			
				117	11	1
,, Subscriptions of 82 New Proprietary Members at 21*s.* each	86	2	0			
,, ,, 80 New Ordinary Members at 21*s.* each	84	0	0			
,, ,, 21 Old Ordinary Members at 42*s.* each	44	2	0			
,, ,, 169 Old Annual Subscribers at 21*s.* each	169	1	0			
,, ,, 21 New Annual Subscribers at 21*s.* each	22	1	0			
,, ,, 172 Old Annual Subscribers at 5*s.* each	43	0	0			
,, ,, 19 New Annual Subscribers at 5*s.* each	4	15	0			
,, Arrears	3	8	0			
				456	9	0
,, Rent of Cellars	50	0	0			
,, Rent from the Geological Society	10	0	0			
,, Rent of Lecture Room	129	10	0			
				189	10	0
,, Receipts for the Museum	112	5	7			
,, Receipts at the Conversazione	24	10	0			
				136	15	7
,, Sundries	10	4	3			
,, Interest	2	8	0			
				12	12	3
				£912	17	11

DISBURSEMENTS.

	£.	s.	d.	£.	s.	d.
By Repairs	160	17	6			
,, Taxes and Rates	4	6	6			
,, Insurance	9	0	0			
,, Coals	15	14	6			
,, Gas	18	5	11			
,, Cleaning the Hall	11	19	6			
				220	3	11
,, Salaries—Curator's	200	0	0			
,, ,, Assistant Curator's	12	10	0			
,, ,, Porter's	31	4	0			
				243	14	0
,, Collections—Geological	54	13	0			
,, ,, Zoological	59	10	10			
,, ,, Archæological	26	10	0			
,, ,, Library	37	14	4			
				178	8	2
,, Postages	9	7	11			
,, Printing and Advertising	28	10	3			
,, Lectures	88	7	11			
,, Conversazione	50	17	11			
,, Commission to Collector	7	4	0			
,, Bankers' Commission	1	11	0			
,, Sundries	11	15	2			
				197	14	2
,, Balances—Bankers'	57	18	3			
,, ,, Curator's	14	19	5			
				72	17	8
				£912	17	11

DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM.

Those marked thus (*) are Honorary Members; thus (†) Members of the Society.

MINERALOGY AND GEOLOGY.

Three Specimens of Eozoon, from Kellberg, in Bavaria and Bohemia	†Mr. Richard Reynolds, F.C.S.
Specimen of Greenstone, from Borrowdale	†Mr. E. Atkinson, F.L.S.
Fine Specimens of Goniatites Listeri and Nautilus Clitellarius	The Halifax Philosophical and Literary Society.
A valuable Collection of Fossils, from the Caradoc Sandstone Group of Shropshire	Dr. Griffiths, Church Stretton, Shropshire.
A series of Specimens from the Upper Ludlow Rocks, and Aymestry Limestone of Ludlow	Mr. A. Marston, Ludlow.
Very fine Mass of Wenlock Limestone, with numerous Organic Remains from Dudley	The Right Hon. the Earl of Dudley and Ward.
Fine Specimen of Tetragonolepis Angulifer, from the Lias of Blackminster; and the Os calcis of an Elephant, from the Brick Earth of Evesham.....	Mr. George Hunt, Evesham, by Francis Darwin, Esq.
Specimens of Axinus Schlotheimi, and Acanthocladia Anceps, from the Magnesian Limestone of Oldfield, Ripon ...	Rev. J. S. Tute, Markington, near Ripon.
An interesting Series of Fossils, from the Lower Green Sand at Upware, near Cambridge.....	Mr. J. F. Walker, F.G.S., York.
Specimens of Amethyst, Cat's Eye, Topaz, Emerald, and Torquoise, in its Matrix...	*Dr. O'Callaghan, LL.D., &c., Leamington.
Very fine Horn Core of Bos Primigenius, found at Axholme, Lincolnshire	*Mr. J. R. Tennant, Kildwick Hall.

Fine Shark's Tooth, from the Green Sand	†Mr. J. Holmes.
A Collection of 320 Specimens of Organic Remains, from the Red or Suffolk Crag in the neighbourhood of Ipswich	Purchased by the Society.
Fine Specimen of Lepidodendron, from the Sandstone of Brighouse	Mr. Fairless Barber, Brighouse.
Fossils from the Mountain Limestone of Llandudno	†Rev. Thomas Hincks.
Portion of the Orbital region of the Skull of a Whale, dredged up from the River Aire, near Hunslet, 1868	Mr. Squire Mortimer.

ZOOLOGY.

Specimen of the Angel Fish (Squatina Vulgaris), caught at Scarborough.....	Mr. J. W. Teale, Scarbro'.
An Egg of the Ostrich	Mrs. Smith.
Specimen of the common Chameleon.....	†Colonel Child.
10 Species of British Entozoa and Lernæa	*Mr. H. Denny.
11 Species of British Land and Fresh-water Shells	Mr. Nelson, Birmingham.
Skull of a Moriori, or Native of the Chatham Islands	Dr. Lingan, Hereford, by Mr. Samuel Hey.
Very fine Specimen of Music Coral (Tubipora Musica); Specimen of the Shetland Argus (Astrophyton Scutatum); Plates of Balaen; 2 Specimens of Emplectella Aspergillum.....	Purchased by the Society.
Several Species of Crustacea, from the Coast of Devonshire.....	†Rev. Thomas Hincks, B.A.
3 Plates of Balaen, from the Physalus Antiquorum	The Royal College of Surgeons, London, by Mr. W. H. Flower.
Very fine and perfect Skeleton of the Aard Vark, or Cape Ant-eater (Orycteropus Capensis).....	†Mr. George Taylor, Buckingham House.
Very fine and perfect Skeleton of the Great Ant-eater of South America (Myrmecophaga Jubata)	†Mr. Samuel Taylor, Hyde Terrace.
Fine Specimen of Callithrix Personatus, from Bogota	†Mr. R. B. Turner.
Pair of Small Grosbeaks, from South America	Mrs. E. Birchall, Newlay.

Specimen of the Spotted Dogfish	Mr. D. R. W. Porrett, Bridlington.
Fine Skeleton of the Hairy Armadillo (Dasypus Sexcinctus)	†Mr. C. G. Wheelhouse.
Casts of Polycystina, by Herr Fric, of Prague	Purchased by the Society.
Specimen of the Neptune's Cup Sponge (Thalissema Neptuni) from Singapore...	Purchased by the Society.
Pair of the Arctic Squa (Lestris Richardsonii)	—. Woolley, Esq., Hull.
Specimens of the King of the Vultures; Capromys Prehensilis; Simia Satyrus; Nycticebus Javanicus; Hydrochærus Capybara; Nasua Rufa; Mycetes Seniculus; Hepoona Cookii; and Zorilla Striata.....	Purchased by the Society.

ARCHÆOLOGY.

A Silver Coin from Egypt	Mr. C. Duncan, Barnsley.
Two fine Stone Implements from Sweden and Denmark	Mr. J. Dixon.
120 Chinese Coins	Rev. T. S. Fleming, F.R.G.S.
Curious Carved Indian Shield from Lucknow, supposed to represent some occurrence in Lord Clive's Indian Campaign	†Mr. R. Wood.
Fine Spear-head of Flint, Celt, and Axe-head, from Denmark.....	†Mr. James Fox, C.E.
Stone Celt, Flint Celt, and Flint Arrow-head, from Sweden	†Mr. Thomas Walker.
A valuable series of Flint and Stone Implements, from Denmark, Sweden, and America.....	Purchased by the Society.
5 Quartz Arrow-heads, from America	Mr. Bryce Wright, London.
Early Specimens of Pottery from Indian Graves at Cuzco; Bronze Tool found in Ancient Ruins at Truxillo	Purchased by the Society.
3 Coins of St. Eadmund, and 1 of Edward the Confessor	Mr. Samuel Croft.
Specimens of Pottery from the Burial Grounds of Cuzco.....	†Mr. John Holmes.
An Egyptian Water Vessel	Purchased by the Society.
Fragment of a Roman Mural Tablet, found on the line of the Roman Wall near Newcastle	†Mr. G. H. L. Rickards.

28 Silver and Copper Coins, viz.: Crown of William; Sixpences of George II. and Victoria; Threepence and Fourpence of George III.; Fourpence of George IV.; Seven Shilling Piece of George III.; Shillings of Elizabeth and Charles I.; Groat of Edward I.; 3 Groats of Edward III.; Groat of Robert of Scotland; Groat of Alexander of Scotland; Quarter of a Spanish Dollar; Five-franc of Louis XVI; 2 York Shillings; Yarmouth Shilling; Sixpence of Newport, Isle of Wight; 7 Copper Tokens and Colonial Coins, and a Guinea Note of the Royds Iron Works	The Misses Scatcherd, East Keswick, on the part of the late Mr. John Scatcherd, R.N.
Very fine Spear Head of Flint, found at Kingsfield, near Bridlington.....	Mr. E. Tindall, Bridlington.
Drachmæ and Tetradrachmæ of Alexander the Great and Philip III; Arsaces XXVIII; Drachmæ and Didrachmæ of Ægina; Gold Coin of Theodosius, found at Market Weighton, and several Anglo-Saxon Coins; a very fine Silver Medallion of Alexander III. of Macedon, in fine preservation; several Silver Coins of Greek Cities and Colonies, viz.: Athens, Corinth, Bretii, Eubœa, Achaia, Heraclea, Thebes, Ægina; Denarii of Faustina, Junr.; Commodus, Lucius Verus; Roman middle Brass of Diocletian, Maximian, Justinus; Roman large Brass of Julius Cæsar, Pompey, &c. ...	Purchased by the Society.

MISCELLANEOUS.

3 very fine Photographs, 7 feet in length, of St. Peter's at Rome, the Colosseum, and the Forum, framed and glazed	†Presented by Mr. Robert John Hudson.
Specimens of the Fruit of Theobroma Cacao and Cassava Bread, Brazil.....	Professor Archer, of Edinburgh.
A Chinese Book	Mr. Salviati.
A very finely carved wooden Staff of Office, from New Zealand.....	Purchased by the Society.
A Firelock of the Volunteers of 1809	Mr. Wm. Trant.

LIBRARY.

The Lake Dwellings of Switzerland, 8vo., by Dr. F. Keller; Prehistoric Times, 8vo., by Sir John Lubbock, Bart.	Purchased by the Society.
Quarterly Journal of the Geological Society, for 1867	Presented by the Geological Society of London.
The Canadian Journal, for 1867	The Canadian Institute, Toronto.
Journal of the Royal Institution of Cornwall, No. xii.	The Royal Cornish Institution.
On a Definite Method of Qualitative Analysis of Animal and Vegetable Colouring Matters, by means of the Spectrum Microscope	H. C. Sorby, F.R.S., the Author.
Reports and Papers read at the Meetings of the Architectural and Archæological Societies of York, Lincoln, and Northampton, for 1862, 3, 4, 5, 6	The Architectural Society, by the Venerable Archdeacon Trollope.
Proceedings of the Royal Society of London, vol. xv., No. 93	The Royal Society of London.
Transactions of the Manchester Geological Society, for 1867	The Manchester Geological Society.
The Radcliffe Observations, for 1867	The Radcliffe Trustees.
Transactions of the Historic Society of Lancashire and Cheshire, vol. vi., Session 1865 and 1866	The Historic Society.
Monthly Notices of the Royal Astronomical Society, vols. i., ii., vi., viii., ix., x., xi., xii., xiii., xiv., xv., xvi., xvii., xviii.	The Royal Astronomical Society.
Proceedings of the Zoological Society, for 1866 and 1867	The Zoological Society of London.
Reliquiæ Isurianæ, by Henry Ecroyd Smith, 4to.	Purchased by the Society.
Proceedings of the Royal Institution of Great Britain, vol. v., pts. 1 and 2	The Royal Institution.
Reports of the Royal Society of Tasmania, for 1862, 1863, 1864, 1865; Monthly Notices of Papers and Proceedings of the Royal Society of Tasmania, for 1863, 1864, 1865; Catalogue of Plants under cultivation in the Royal Society's Gardens at Hobart Town; Results of 25 years' Meteorological Observations at Hobart Town; by Francis Abbott, F.R.A.S., 4to.	The Royal Society of Tasmania.

Proceedings of the Academy of Sciences of Philadelphia, for 1866, parts 1, 2, 3, 4, 5	The Academy of Sciences of Philadelphia.
Transactions of the Connecticut Academy of Arts and Sciences, vol. i., pt. 1	The Connecticut Academy of Arts and Sciences.
Annual Reports of the Secretary of War of the United States of America, for 1866	Edward M. Stanton, Secretary at War.
Proceedings of the Essex Institute, United States, vol. iv., and Nos. 1 and 2 of vol. v., 8vo.; The Naturalist's Directory, pt. 1, North America to West Indies, 12mo.	The Essex Institute, U.S.
Smithsonian Miscellaneous Collections, vols. vi. and vii.....	The Smithsonian Institute.
Proceedings of the Boston Society of Natural History, vol. i., pts. 1 and 2, 4to.; Condition and Doings of the Boston Society of Natural History	The Boston Natural History Society, United States.
Annual Report of the Trustees of the Museum of Comparative Geology at Harvard College, in Cambridge, 1866; Annual Report of the President and Treasurer of Harvard College, 8vo., 1865 and 1866; Catalogus Universitatis Harvardianæ, Catalogue of Officers and Students, for 1866 and 1867.....	The Trustees of Harvard College, Cambridge, U.S.
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Wm. Osburn, M.R.S., Lit., *Leeds.*

Richard Owen, M.D., D.C.L., LL.D., F.R.S., Foreign Associate of the Institute of France, &c., *London.*

C. C. Oxley, *Redcar.*

Sir Harry Parkes, K.C.B., *Japan.*

Mons. Boucher de Perthes, President Soc. d'Emul. Imp. d'Abbeville, *Abbeville.*

John Phillips, M.A., LL.D., F.R.S., F.G.S., &c., Reader in Geology in the University of Oxford.

Major-General Sir Henry Rawlinson, K.C.B., F.R.S., M.R.A.S., &c., *London.*

The Right Hon. the Earl de Grey and Ripon, F.R.S., F.G.S., *Studley Royal, Ripon.*

The Lord Bishop of Ripon, F.R.S., *The Palace, Ripon.*

George Gilbert Scott, F.S.A., R.A., *London.*

Rev. Adam Sedgwick, M.A., F.R.S., Woodwardian Professor of Geology in the University of Cambridge.

Gustave Seyffarth, A.M., D.D., Ph.D., Professor in the Concordia College, St. Louis, United States.

Rev. Wm. Sinclair, M.A., *Pulborough Rectory, Sussex.*

Capt. Edmond Smyth, *Almora, Bengal.*

Col. Sykes, M.P., F.R.S., &c., *London.*

John Robert Tennant, *Kildwick Hall.*

The Venerable Archdeacon Trollope, M.A., F.S.A., *Leasingham, Lincoln.*

J. K. Walker, M.D., *Dean Head, Halifax.*

Thomas Wright, M.A., F.S.A., M.R.S.L., Member of the Institute of France; Corresponding Member of the Society of Antiquaries of Normandy; of the Royal Society of Northern Antiquaries of Copenhagen; of the Society of Antiquaries of Scotland, &c., &c.; *Brompton.*

EDWARD BAINES AND SONS, PRINTERS, LEEDS.

LEEDS

PHILOSOPHICAL & LITERARY SOCIETY.

THE ANNUAL REPORT

FOR 1868-69.

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FORTY-NINTH REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL AND LITERARY

SOCIETY,

AT THE CLOSE OF THE SESSION

1868-69.

Read at the Annual Meeting, May 4th, 1869.

Leeds:
Printed at the Office of The Yorkshire Post, Albion Street.

MDCCCLXIX.

IMPORTANT RULE

RESPECTING THE PROPERTY OF THE SOCIETY.

PASSED OCTOBER 8TH, 1860.

That in the event of a dissolution of this Society, its Property and Effects, whether real or personal, shall not be disposed of for the personal benefit of the Members, but shall be appropriated in such manner for the advancement of Science, Literature, or Art, in the Town of Leeds, as shall be determined by a majority of the Members at an extraordinary Meeting to be convened for that purpose. But that no dissolution of the Society shall take place without the consent, in writing, of a majority holding not less than two-thirds of the Proprietary Shares.

FORM OF A BEQUEST TO THE SOCIETY.

Every person desirous of bequeathing to the Society any Sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form:—

I give and bequeath to the Trustees for the time being of the Society established at Leeds, called "THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY," *for the use of the said Society, the sum of* , *to be paid out of such part of my personal Estate as I may legally charge therewith.* [Or here enumerate the Effects or Property intended to be bequeathed]. *And I direct that the Receipt of the Treasurer of the said Society for the time being, shall be an effectual discharge to my Executors for the said Legacy.*

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

FORTY-NINTH SESSION.

At the close of the 49th Session, the Council have pleasure in being able to congratulate the Society on its continued prosperity. Some diminution in the number of Members has undoubtedly taken place, and some decrease in Income, but as the majority of the Members who have ceased to belong to the Society were Subscribers of 5s., the Income has been only slightly affected.

The Council have again the pleasure of acknowledging a liberal donation of £10 from Mr. Thomas Elmsley, of Burley, in Wharfedale.

The Balance Sheet of the Society, which will accompany this Report, will show that in consequence of there having been expended a considerable sum in the purchase of cases, and in extraordinary Repairs of the building, which will be more fully explained in a subsequent part of this Report, there remains a small balance of £15 5s. 2d. against the Society.

The following Lectures and Papers have been read before the Society during the past Session:—

1. "Some recent Observations on the Physiology of Language." By the President, J. D. Heaton, Esq., M.D. Read 20th October, 1868.
2. "On the influence of the Telescopic Researches of the late Earl of Rosse on the Progress of Sidereal and Nebular Astronomy." By E. W. Brayley, F.R.S.

3. "On the Mapping of the Surface of the Moon." By W. R. Birt, F.R.A.S.

4. "On certain Questions connected with the Antiquity of the Human Race." By R. Gordon Latham, M.D., &c.

5. "The Mission to Theodore." By H. Blanc, M.D., late captive in Abyssinia.

6. "The Abyssinian Expedition." By Clements R. Markham, F.R.G.S.

7. "The Battle of the Two Philosophies, Mental and Physical." By Rev. Alfred Barry, D.D.

8. "The Greenlanders Past and Present." By Edward Whymper, F.R.G.S.

9. "On the Faculties of Brutes." By Rev. Henry Temple, M.A.

10. My Ramblings in Persia." By Professor Arminius Vambery.

11 & 12. "The Vocal Music of the Elizabethan and Victorian Eras," compared and contrasted. By William Spark, Mus. Doc.

A suggestion having been made to the Council that a Special Series of Lectures, illustrative of the National Exhibition of Works of Art collected in the New Infirmary, would be of great use, and no other body being prepared to make the necessary arrangements, some Members of the Society undertook the task, with the sanction and support of the Committee of the Exhibition. The main object of these Lectures was to point out, for the benefit of those who were intending to visit the Exhibition, the principal objects of interest in the several Collections of Paintings, Drawings, Engravings, Portraits, and objects of Archæological, Ceramic, and Artistic Excellence, and this was well attained, by securing the services of gentlemen, whose names were a

guarantee for their eminence in the respective departments they undertook to illustrate. The following is a list of this Special Course of Lectures:—

Introductory Lecture, Friday, June 12th.—"The Characteristics of Fine Art, Ancient and Modern, English and Foreign." By Tom Taylor, Esq., M.A.

Second Lecture, Monday, June 15th.—"Art Applied to Industry." By M. Digby Wyatt, Esq.

Third Lecture, Thursday, June 25th.—"Landscape Art, and its Different Styles, from the time of the Old Masters to the Present Time." By George Redford, Esq., F.R.C.S., Assistant Commissioner.

Fourth Lecture, Thursday, July 2nd.—By Ralph N. James, Esq., Superintendent of the Catalogue of Pictures in the Exhibition. "The Portrait Gallery of Yorkshire Worthies." Delivered by Edward Hailstone, Esq., F.S.A., F.R.S.L., &c., Honorary Superintendent of the Gallery of Yorkshire Worthies.

Fifth and Sixth Lectures, Tuesday, July 7th, and Thursday, July 9th.—"Pottery and Porcelain," with Illustrations. By William Chaffers, Esq., Superintendent of the Museum of Ornamental Art.

Seventh Lecture, Thursday, July 16th—"The Ancient Masters Considered from Modern Points of View." By J. C. Robinson, Esq., F.S.A., Member of the Academy of Fine Arts of St. Luke, in Rome, &c.

Eighth Lecture, Thursday, July 23rd.—"Engravings and Drawings in the Exhibition." By B. B. Woodward, Esq., B.A., F.S.A., Keeper of Prints and Drawings to the Queen.

Ninth Lecture, Thursday, July 30th.—"On the Influence of Art, and the promotion of Taste." By Henry O'Neil, Esq., A.R.A.

The Annual Conversazione was held on the 9th February, and was attended as usual by a large number of the Members and their friends. Mr. Louis C. Crossley,

and Messrs. Harvey and Reynolds, exhibited many interesting and novel experiments, and objects, including Hughes' Roman Type Printing Telegraph; Thomson's new Atmospheric Electrometer; Moffat's Oleographs; Vitro Enamel Photographs; Chladni's Sand Figures; Geissler's Vacuum Tubes. There were also exhibited many beautiful articles of Chinese and Japanese Manufacture, by Miss Holdsworth and Mr. S. L. Nussey; an extensive series of Photographs, taken during the late Expedition to Abyssinia, and lent by Mr. Edward Atkinson; Photographs of Venice, Rome, Vienna, and Spain, by Mr. Stephen Ernest Smith and Mr. Stables; Naya's Photographs of Paintings of the Italian Schools, by Mr. John Rhodes; Imperishable Photographs by Swan's Patent Carbon Process, (by the Patentees); and various others by our Townsmen. A beautiful Marble Bust of Wm. Hey, by Woolner, intended for the New Infirmary, was contributed by the Subscribers. Pictures, Bronzes, Vases, and Italian Plate of the 17th Century, were lent by Mr. Howgate. An interesting series of Rifles, by Messrs. Greenwood and Batley; and of specimens illustrating the Manufacture of the Boxer and Spencer Rifle Cartridges, by Mr. Benson Ford. There were also an extensive series of Paintings and Drawings by local Artists.

The state of the floor of the large Zoological Room had been for some time a source of anxiety to the Council. More than two years ago a deflexion was observed to have taken place, and this during the past year having sensibly increased, the Council felt it necessary to take steps to remove any apprehensions as to its security. Acting under the advice of two of their

Members, Messrs. Filliter and Manning, who kindly undertook to carry out the necessary works, they have, by the introduction of two iron pillars in the Theatre, effectually provided for the support of the floor. This alteration has involved an expense of £120 6s.

It is with extreme regret that the Council have to report that owing to continued indisposition they have lost the services of the Rev. Thomas Hincks, who for many years has rendered most efficient aid to the Society as Member of Council, Curator, and President.

The Council have also lost the services of Dr. Atlay, by his elevation to the See of Hereford. The Bishop of Hereford having very liberally placed at the disposal of the Council the Proprietary Share held by him whilst Vicar of Leeds, the same has, with the approval of the Rev. Canon Woodford, been presented to the Vicar of Leeds for the time being, to be held from time to time, by the existing Vicar of the Parish of Leeds.

The retiring Council have recommended the election of the Rev. Thos. Hincks, and of the Bishop of Hereford, as Honorary Members.

The number of visitors to the Museum during the past year has been 44,988, a number greatly in excess of any former Session, and arising from the attraction of numerous strangers to the town by the Art Treasures Exhibition, no less than 31,189 persons having passed through the Museum in the four months from July to October.

The Collections of the Society have during the past year, by the liberality of several of its Members, received numerous and most important additions. In Geology,

that which claims special notice, is a Skeleton of one of those singular extinct Cursorial Birds of New Zealand, the Elephant-footed Moa *(Dinornis Elephantopos)*, from Otago. Although this species is not one of the most gigantic, it is especially remarkable for the massive proportions of the lower extremities, from which it derives its specific name. An opportunity having occurred of securing so important a specimen, the necessary funds were supplied by subscription by Messrs. J. G. Marshall, Arthur Marshall, S. J. Brown, Dr. Chadwick, Thomas Harvey and Miss Dawson, and through their liberality the Society is in possession of one of the only two specimens of this species of Moa in the Kingdom, the other example being in the British Museum. The Society hopes also to receive shortly from New Zealand a collection of Moa Bones, by which some of the other species of Dinornis may be illustrated. The other additions to this department are a portion of the Carapace of the *Glyptodon Reticulatus*, from Buenos Ayres, an extinct and gigantic analogue of the Armadillo, acquired by purchase; an interesting selection of 38 specimens of Graptolites, from the Upper Llandillo Rocks, of Dumfrieshire, and the Bala Rocks of the Coniston series, from Dr. H. A. Nicholson, of Penrith; and a series of Sharks' Teeth and Cetacean Bones, from the Phosphate Beds, near Charleston, presented by Mr. Cowlan Gravely, of Charleston, U.S.

The Zoological Collections have been enriched by the following valuable additions:—From Dr. Heaton, (the President), a remarkably fine adult male, and also a young specimen, of the Proboscis Monkey *(Presbytes Nasalis)*; from the Mayor, (T. W. George, Esq.,)

three well marked species of Feline Animals, the Chetah *(Gueparda Jubata)*, the Serval *(Leopardus Serval)*, and the Ocelot *(Leopardus Pardalis)*; and by the purchase of a fine specimen of the Puma *(Leopardus Concolar)*, and a rare species, the Kuichua *(Leopardus macroura)*, this family is now very fully represented.

A fine example of the Thrasher or Fox Shark, a rare British species, caught at Bridlington, has been presented by Francis Darwin, Esq., and an interesting Collection of Reptiles, Fish, Crustacea, and Insects, from Australia, by Mr. J. A. Buttery; and the Society has acquired, by purchase, good specimens of four interesting Genera,—the Spiny-tailed Squirrel *(Anomalurus Derbianus)*, the Canada Porcupine *(Erethizon Dorsatum)*, Azaras Opossum *(Didelphis Azaræ)*, and the flying Lemur *(Galeopithecus Volans)*. In Comparative Anatomy, the following important additions must be recorded; by Messrs. Stead and Simpson a skeleton of the Adult Male Arctic Walrus or Morse *(Trichecus Rosmarus)*, probably the finest in the Kingdom, measuring 12 ft. in length; by the President (Dr. Heaton), an entire Skeleton of the Bottle-nosed Whale (*Globiocephalus Svineval*), which is a valuable accession to the order *Cetacea*, hitherto very imperfectly represented in the Museum; by Dr. Chadwick, the Skeleton of the Koala, or Australian Bear (*Phascolarctus Cinereus*), which represents a remarkable Genus of Marsupial Animals, whose Anatomy it has long been the wish of the Curator to illustrate more fully; by the Smithsonian Institution at Washington, a Skull of the Grisly Bear (*Ursus Ferox*), interesting in a Geological point of view, from its supposed relation to the great extinct Cave Bears of Europe. These have also been

added by purchase, the skeletons of two well marked Genera, the Patagonian Cavy *(Dolichotis)*, and that of the Hornbill *(Buceros)*. To the Ethnological Department, Mr. W. Clapham, of Portland, Victoria, has presented two Skulls, one being that of Moko, King of the Ethrick tribe, and the other of a Female from the same locality.

The Archæological Museum has received the following valuable additions:—From Edward Hailstone, Esq., F.A.S., of Horton Hall, near Bradford, an extensive series of Casts of the Royal Seals of England, and of numerous ancient Monastic, Ecclesiastical, and Corporate bodies; and from Mr. Fenteman, a beautiful specimen of Penmanship, being a Table of the Revenue and Expenditure of France in 1787, apparently a public document.

To these must be added as possessing, in addition to their intrinsic value, a local interest, some beautiful Flint Arrow Heads, Scrapers, and Flakes found in the Adel Reformatory Grounds, and presented by Mr. Twigg; specimens of Pottery, consisting of Drinking Mugs and Lamps, Keys, Musket Balls and Pipes, and Glass, found in excavating on the site formerly occupied by the Chantry of St. Mary Magdalene, at the junction of Briggate with Upperhead Row, presented by Mr. H. B. Legg; and a scarce and early Map of Leeds, with elevations of the principal buildings which it then possessed, from Miss Sharp.

The Library continues to receive the Transactions and Reports of the principal Scientific Societies of Great Britain, as well as of several foreign countries.

The Council, in concluding this Report, think it desirable to call attention to the fact that before the close of the next Session this Society, the oldest Scientific Institution in Yorkshire, and one of the most flourishing in the provinces, will have existed *half a century.*

It is believed that of the gentlemen who attended the First Meeting, at the Court House, on the 11th Dec., 1818, and of those who may otherwise be accounted Founding Members of the Society, about 16 yet survive. Would it not be possible to arrange some Meeting of the *Old* and *New* Members, so as to promote the transmission of that spirit which has animated this Society, and also given a stimulus to so many other Societies similarly constituted?

The annexed is a summary of the results of the Meteorological observations derived from the monthly averages for the past year:—

1868.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January	39	29·517	2·360
February	44	29·699	1·225
March	45	29·650	1·615
April	48	29·600	1·645
May	58	29·652	0·855
June	61	29·804	0·130
July	66	29·758	0·260
August	63	29·575	1·645
September	58	29·591	2·925
October	47	29·590	2·405
November	42	29·690	1·590
December	44	29·152	6·465

The greatest degree of heat, as indicated by the Thermometer in the Sun, was 106 on the 5th September; greatest in the shade 94, on the 28th July; and minimum 27° on the 24th January.

The greatest Barometic pressure was on the 15th April, being 30·500, the temperature of the Mercury being 64°; the least pressure was on the 27th December, being 28·390, temperature of Mercury 49°.

The greatest fall of rain was on the 25th September, being 1·060

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY,

FROM JULY 1st, 1868, TO JUNE 30th, 1869.

RECEIPTS.

	£.	s.	d.	£.	s.	d.
To Balance in Bankers' hands	57	18	3			
,, ,, Curator's hands	14	19	5			
				72	17	8
,, Subscriptions of 79 New Proprietary Members, at 21s. each	82	19	0			
,, ,, 79 New Ordinary Members, at 21s. each	82	19	0			
,, ,, 19 Old Ordinary Members, at 42s. each	39	18	0			
,, ,, 148 Old Annual Subscribers, at 21s. each	155	8	0			
,, ,, 18 New Annual Subscribers, at 21s. each	18	18	0			
,, ,, 140 Old Annual Subscribers, at 5s. each	35	0	0			
,, ,, 23 New Annual Subscribers, at 5s. each	5	15	0			
,, 4 Arrears	4	4	0			
				425	1	0
,, Rent of Cellars	50	0	0			
,, Rent from the Geological Society	10	0	0			
,, Rent of Lecture Room	72	2	0			
				132	2	0
,, Receipts for the Museum	203	16	1			
,, Receipts at the Conversazione	21	0	0			
				224	16	1
,, Sundries { Don. from Mr. Emsley £10 0 0; Sub. for pur. of Dinornis 50 0 0; ,, Walrus . 40 0 0; Discount from Gas Co. . 0 3 8 }	100	3	8			
,, Interest	2	15	0			
				102	18	8
				957	15	5
,, Balance due to Banker	15	5	2			
				15	5	2
				£973	0	7

DISBURSEMENTS.

	£.	s.	d.	£.	s.	d.
By Repairs	233	11	0			
,, Taxes and Rates	4	2	4			
,, Insurance	9	0	0			
,, Coals	7	16	9			
,, Gas	10	5	2			
,, Cleaning the Hall	10	3	6			
				274	18	9
,, Salaries—Curator's	200	0	0			
,, ,, Assistant Curator's	11	14	6			
,, ,, Porter's	31	4	0			
				242	18	6
,, Collections—Geological	56	10	10			
,, ,, Zoological	152	5	2			
,, ,, Archæological	13	10	11			
,, ,, Library	27	4	11			
				249	11	10
,, Postages	9	7	8			
,, Printing and Advertising	31	15	6			
,, Lectures	71	6	6			
,, Conversazione	52	13	11			
,, Commission to Collector	8	5	6			
,, Bankers' Commission	1	15	0			
,, Sundries	18	0	1			
				193	4	2
				960	13	3
,, Balance in Curator's hands	12	7	4			
				12	7	4
				£973	0	7

DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM.

Those marked thus (*) are Honorary Members; thus (†) Members of the Society.

MINERALOGY AND GEOLOGY.

Gold on Quartz, and Native Gold, from Warpuna, River Grey, New Zealand	Mr. W. R. Mackley, Wilsden.
Hematitic Iron Ore, from Castle Caldwell, Fermanagh	†Mr. E. Irwin.
An interesting Series of Sharks' Teeth, and Cetacean Bones, from the Phosphate Beds, at Charleston, U.S.	Mr. Cowlam Gravely, Charleston.
Two Specimens of Gold Bearing Quartz, from the St. Lawrence Gold Mine, Mount Uniacke, Nova Scotia	Mr. James Walker, Mount Uniacke.
Thirty-three Species of Graptolites, from the Upper Llandillo Rocks, of Dumfrieshire, and Bala Rocks, of the Coniston Series	Dr. H. A. Nicholson, Penrith.
Fine and perfect Skeleton of the Elephant-footed Moa, (Dinornis Elephantopus) from New Zealand	Purchased and presented by †Mr. J. G. Marshall, †Mr. A. Marshall, †Dr. Chadwick, †Mr. S. J. Brown, †Mr. T. Harvey, Miss Dawson.
Portion of the Carapace of the Glyptodon Reticulatus, from Buenos Ayres	Purchased by the Society.
A Series of Fossils, from the Llandovery Rocks, South Wales	Mr. Thos. McKenny Hughes, F.G S., &c.
Several Specimens of Fish Remains, from the Coal Field of Newcastle-upon-Tyne	Mr. J. P. Barkas, Newcastle.
A Series of Rock Specimens, from Cumberland and Westmoreland	†Mr. E. Atkinson.

ZOOLOGY.

Fine Specimen of Sirex Gigas	†Mr. F. Fryer.
Several Reptiles and Insects, &c., from Australia, including the Frilled Lizard; Stump-tailed Lizard; Monitor; Frogs; Star Fish, &c.	Mr. J. A. Buttery, Sydney.
Specimen of Agama Cornuta, from America	Mrs. Whiting, Headingley Hill.
Several interesting Genera of Insects, from the Amazons; Specimens of Pholidotus Indicus and Tatusia Peba; Four Specimens of Foreign Squirrels, Bosmans Potto, (Perodicticus Potto); Indian Musk (Meminna Indica), Rabbit-eared Paragalea (Paragalea Lagotus); and Skeletons of the Dolichotis Patachonica and Buceros	Purchased by the Society.
Very fine Adult Male Specimen and Young of the Proboscis Monkey (Presbytes Nasalis).....	†Dr. Heaton (the President.)
An interesting Collection of Pteropoda and Heteropoda	Purchased by the Society.
Specimens of Aleira Elegans and Cremnobates Kerauclerenii	Mr. F. P. Marret, Liverpool.
Fine Pair of the Canada Grey Squirrel...	†Dr. Eddison.
Fine living Specimen of the Bird Catching Spider, found in Logwood, which had been in this country upwards of six months	†John Marshall, Esq., Horsforth Hall.
Fine Specimen of the Fox Shark or Thrasher, 12 feet in length, caught at Bridlington, Oct. 15th	Francis Darwin, Esq., Creskill.
Two Pair of Horns and Frontal Bones of the American Deer (Cervus Virginianis)	Mr. Cowlan Gravely, Charleston.
Specimens of the Common Baboon (Cynocephalus Babouin); and White-fronted Lemur (Lemur Albifrons)	Mr. Edmunds, Royal Windsor Castle Menagerie.
Specimen of the Puma (Leopardus Concolor) and Spider Monkey (Ateles Ater)	Purchased by the Society.
Fine Specimens of the Chetah (Gueparda Jubata); Serval (Leopardus Serval); Ocelot (Leopardus Pardalis)	†Thomas W. George, Esq., (Mayor of Leeds.)

Skeleton of the Bottle-nose Whale (Globiocephalus Svineval), caught at Leith, 1867	†Dr. Heaton (the President.)
Specimens of the Canada Porcupine (Erethizon Dorsatum); Azara's Opossum (Didelphis Azaræ); Flying Lemur or Colugo (Galeopithecus Volans); Spiny-tailed Squirrel (Anomalarus Derbianus); Ku-Kang (Nycticebus javanicus); Agile Gibbon (Hylobates Agilis); Flying Fox or Rousette (Pteropus Rubricollis); Bradypus Torquatus; Indian Gerbille (Gerbillus Indicus)	Purchased by the Society.
Skull of the Grizzly Bear (Ursus Ferox), from California	The Smithsonian Institution, Washington
Fine Pair of the Swallow-tailed Kite and several Foreign Hawks; Fine Specimens of the African White Ant and Velella Limbosa	Purchased by the Society.
Skeleton of the Koala or Australian Bear (Phascolarctus Cinereus)	†Dr. Chadwick.
Magnificent Skeleton of the Male Walrus or Morse (Trichecus Rosmarus)	Presented by Messrs. Stead and Simpson.
Skulls of Moko, King of the Ethrick Tribe; and that of a Female Australian, from the Neighbourhood of Portland, Victoria	Mr. Wm. Clapham, Portland, Victoria.
Fine Specimen of Sponge from the West Indies	Mr. Nathan Hodgson, Oswego Fall, America.

ARCHÆOLOGY.

Worked Flints, found on the Wolds, near Fimber	Mr. Ward, Burley, Wharfedale.
A Leeds Sixpence, of 1812	Mr. Wm. Trant, of London.
A fine Flint Dagger, from Denmark	†Mr. J. D. Birchall.
Eight Quartz and Stone Arrow-heads, from Indian Graves in America; Flint Javelin and Spear-heads, and a Knife, from Denmark	Purchased by the Society.
An extensive and interesting Series of Flint Flakes, Arrow-heads, Javelin-heads, Scrapers, Knives, and other Flint Implements, found in excavating the Reformatory Grounds at Adel, in 1868-9	Presented by Mr. Twigg, Superintendent.

Two Glazed Earthern Lamps, One Two-handled Glazed Mug, One Glazed Mug, One Key, Tobacco Pipe, and Leaden Stamp, found in an old excavation 12 ft. deep in the solid rock on the site of the Chantry of St. Mary Magdalene; and an ancient Key, Tobacco Pipe, and Two Musket Balls, found in the upper roof; also part of the Glass of one of the Windows of the above Chantry.	Mr. H. B. Legg.

MISCELLANEOUS.

Pike used by the Fenians at Fallaght, March 5th, 1867, taken by Sub-Inspector Burke	†Mr. Edwin Irwin.
Twenty Cakes of Cassava Bread from Jamaica; Native Razor Strop, made of the bark and cellular tissue of the Jamaica Aloe by the Natives of Jamaica.....	Mr. Wm. Tyson.
Etat des Revenus et des Depenses de la France, de sa Population et de son etendue, a l'Epoque de l'Assemblee dea Notabie annee 1787, (beautifully written on one sheet, presumed to be an official document)	Mr. Fenteman.
A New Zealand Chief's Mat	Rev. A. Browne, Calverley.
Summer and Snow Shoes of the Sioux Indians	Mr. Nathan Hodgson, Oswego Fall, America.

THE LIBRARY.

Proceedings of the Zoological Society, for 1868, and pt. 1, 1869	The Zoological Society of London.
Reports and Papers read at the Meetings of the Architectural Societies of York, Lincoln, &c., for 1867; Index to the first Eight Volumes of the Papers and Reports read at the above Societies, by the Rev. George Rowe	The Architectural Society, through the Venerable *Archdeacon Trollope.
An Introduction to Fossil Organic Remains, by James Parkinson, 8vo.; Manual of British Vertebrate Animals, by the Rev. Leonard Jenyns, 8vo.....	†Mr. W. S. Ward.

An Essay on the Geology of Cumberland and Westmoreland, by H. A. Nicholson., D.Sc.F.G.S.	The Author.
On the Principles of Æsthetic Medicine, by Joseph Peel Catlow, M.R.C.S.	The Literary Executors of the Author.
Reliquiæ Aquitanicæ, pts. 6, 7, 8, 9	The Executors of the late Henry Christy, Esq.
Report of the British Association for the Advancement of Science, for 1867.....	The British Association.
Report of the Hull Royal Institution, for 1868.....	The Hull Royal Institution.
The Radcliffe Observations, vol. xxx., 8vo.	The Radcliffe Trustees.
The Greenwich Observations, for 1866, 4to.	The Lords Commissioners of the Admiralty.
Gog-Magog ye Albion, or An Hour with ye Guildhall Giants; being a concise historie of those figures, carefully collected from the most authentical Authors and Records of Antiquitie, by Samuel L. Nussey, citizen of Leeds. Imprinted by ye Author, 1867	†Mr. Samuel Leathley Nussey, the Author.
Second Supplement to the Coinage of Scotland, with Lists, Descriptions, and Extracts of Sales, &c., 4to., Cork, 1868	John Lindsey, Esq., the Author.
Five Pamphlets, including—"Further Notices of the Early Inscribed Stones of Wales, at Llanharam"; "On the Preservation of the Crosses, and Inscribed Stones, &c., in Brecknockshire"; "Early Christian Art, illustrated by ivory carvings"; "Remarks upon the Diptychs of the Roman Consuls"	Mr. J. O. Westwood, the Author, Oxford.
Proceedings of the Essex Institute, United States, vol. v., pts. 5-6	The Essex Institute, United States.
Annual Report of the Halifax Literary and Philosophical Society, 1868.....	The Halifax Literary and Philosophical Society.
Proceedings of the Meeting of Civil Engineers, at Leeds, 1868	The Secretary.

Memoirs of the Geological Survey of Great Britain; Mineral Statistics for 1867	By order of the Director General
Scientific Opinion for 1869	The Publishers.
A History of the British Hydroid Zoophytes, by Thomas Hincks, B.A., 2 vols., royal 8vo.	Purchased by the Society.
Thesaurus Siluricus, the Flora and Fauna of the Silurian Period, by J. J. Bigsby, M.D., F.G.S., 4to.	Presented by the Royal Society of London.
Some Account of the Blackmore Museum, Salisbury, 8vo.	The Trustees of the Blackmore Museum.
Transactions of the Royal Society of Edinburgh, vol. xxv. pt. 1; Proceedings of ditto, 1867-68.	The Royal Society of Edinburgh.
Report of the Norfolk and Norwich Museum, for 1868	The Committee of the Norfolk and Norwich Museum.
Transactions of the Historical and Archæological Association of Ireland, No. 4.	The Kilkenny Archæological Society.
Proceedings of the Philosophical Society of Glasgow	The Philosophical Society of Glasgow.
Proceedings of the Manchester Geological Society, for 1868	The Geological Society, Manchester.
Proceedings of the Royal Society of London	The Royal Society of London.
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The Report of the Royal Cornwall Polytechnic Institution, 1867	The Society.
"On the Relation of the Luminous Prominences on the Faculæ of the Sun," by Professor Brayley	The Author.
The Yorkshire Archæological and Topographical Journal, pt. 1	The Huddersfield Archæological and Topographical Association.
Sur la Machoire Humaine Decouverte, par M. Boucher de Perthes; Dans de Deluvium d'Abbeville, par M. de Quatrefages	*M. Boucher de Perthes, Abbeville.
Reports on the Paris Universal Exhibition, for 1867, 5 vols., 8vo.....	Presented through the Society of Arts.
Memoirs pour Servir a la Connaissance Des Crinoides Vivants Par Michael Sars, 4to., Christiana, 1868	The Author.
Die Erdbeben in der Jahren, 1867 and 1868, Von Carl Ludolf Griesbach ..... Der Jura von St. Veit ber Wien, von Karl Griesbach	The Author.
The Australasian, weekly paper, vol. vi.	The Publishers.
Reports of the Royal Society of Tasmania, for 1866; Monthly Notes of Papers and Proceedings of the Royal Society of Tasmania, for 1866-7	The Royal Society of Tasmania.
War Department (Surgeon General's Office, June 10, 1868)—Report on Epidemic Cholera and Yellow Fever in the United States' Army, during 1862,	By Order of the Surgeon-General U.S. Army.
Proceedings of the Academy of Natural Sciences of Philadelphia, for 1867 ...	The Academy of Sciences, Philadelphia.
The American Conflict, and History of the Great Rebellion in the United States, by Horace Greeley, 2 vols., Royal 8vo.	The Author.
Proceedings of the American Philosophical Society, vol. x., No. 77, 1861 ... Catalogue of the Library of the American Philosophical Society	The American Philosophical Society.

Transactions of the Academy of Science of St. Louis, vol. ii., No. 3	The Academy of Science, St. Louis.
Memoirs Read before the Boston Society of Natural History, vol. i., pt. 3, 4to.; Proceedings of the Boston Society of Natural History, vol. xi., 1866-8; Conditions and Doings of the Boston Society of Natural History, for 1867 and 8, 8vo.	The Boston Society of Natural History, United States.
Smithsonian Contributions to Knowledge, vol. xv., 4to.; Smithsonian Report, 1866, 8vo.	The Smithsonian Institution, Washington, United States.
Reports of the Commissioners of Patents, for the years 1863-4-5, 8vo.	The Commissioners of Patents, Washington, United States.
The Canadian Journal, for 1868	The Canadian Institute, Toronto.

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Rev. Adam Sedgwick, M.A., F.R.S., Woodwardin Professor of Geology in the University of Cambridge.

Gustave Seyffarth, A.M., D.D., Ph.D., Professor in the Concordia College, St. Louis, United States.

Rev. Wm. Sinclair, M.A., *Pulborough Rectory, Sussex.*

Capt. Edmond Smyth, *Elkington Hall, Louth, Lincolnshire.*

Col. Sykes, M.P., F.R.S., &c., *London.*

John Robert Tennant, *Kildwick Hall.*

The Venerable Archdeacon Trollope, M.A., F.S.A., *Leasingham, Lincoln.*

J. K. Walker, M.D., *Dean Head, Halifax.*

Thomas Wright, M.A., F.S.A., M.R.S.L., Member of the Institute of France; Corresponding Member of the Society of Antiquaries of Copenhagen; of the Society of Antiquaries of Scotland, &c., &c.; *Brompton.*

Printed at the Office of The Yorkshire Post, 23, Albion Street, Leeds.

The Boston Nat Hist Society
Wm Stokes

LEEDS

PHILOSOPHICAL & LITERARY SOCIETY.

THE ANNUAL REPORT

For 1869-70.

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THE FIFTIETH REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL & LITERARY

SOCIETY,

AT THE

CLOSE OF THE SESSION 1869-70.

Read at the Annual Meeting, May 4th, 1870.

LEEDS:
PRINTED BY CHARLES GOODALL, 16, WOODHOUSE LANE.
MDCCCLXX.

IMPORTANT RULE

RESPECTING THE PROPERTY OF THE SOCIETY.

PASSED OCTOBER 8TH, 1860.

That in the event of a dissolution of this Society, its Property and Effects, whether real or personal, shall not be disposed of for the personal benefit of the Members, but shall be appropriated in such manner for the advancement of Science, Literature, or Art, in the Town of Leeds, as shall be determined by a Majority of the Members at an extraordinary Meeting to be convened for that purpose. But that no dissolution of the Society shall take place without the consent, in writing, of a majority holding not less than two-thirds of the Proprietary Shares.

FORM OF A BEQUEST TO THE SOCIETY.

Every person desirous of bequeathing to the Society any Sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form :—

I give and bequeath to the Trustees for the time being of the Society established at Leeds, called "THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY," *for the use of the said Society, the sum of , to be paid out of such part of my personal Estate as I may legally charge therewith.* [Or here enumerate the Effects or Property intended to be bequeathed.] *And I direct that the Receipt of the Treasurer of the said Society for the time being, shall be an effectual discharge to my Executors for the said Legacy.*

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

FIFTIETH SESSION.

The Council have much pleasure in congratulating the Society on its present condition and prospects. During the past year fifty-three new Members and Subscribers have joined its ranks, while the losses by death and otherwise have been only eighteen. The Accounts, also, which accompany the Report, shew that its pecuniary position is not unsatisfactory.

Its Members and subscribers amount to 613, its annual income is about £710, and its general and unavoidable expenditure about £640, so that it has a sum of £50 to be applied annually to the increase of its Collections.

The Council have pleasure in reporting a Donation of £100, for the general purposes of the Society, from the Rev. James Armitage Rhodes, of Carlton, who has on former occasions been a most liberal contributor to its Funds and Collections; and also a further donation of £10 from Mr. Thomas Emsley, of Burley-in-Wharfedale.

The present Annual Meeting is of no ordinary character, as it marks the close of the first half century of the Society's existence, and seems to invite something more than the usual statement of its present numbers and financial position, suggesting rather the inquiry how far it has accomplished the objects for which it was founded, and perhaps inviting a consideration of what shall be its action for the future.

For the past, the Council trust that the Society will agree with them in thinking that the review of what has been accomplished, though it may reveal some failures, is on the whole eminently satisfactory, and that if it has not achieved everything that its promoters hoped, it has undoubtedly in many respects exceeded their most sanguine expectations. When, in the year 1818, its founders met to recommend the establishment of a Society in Leeds for the promotion of

science and literature, even the most sanguine of them, could scarcely, have anticipated that at the end of only half a century the Society would have twice, if not three times, out-grown the provision which the liberality of its townsmen had made for its accommodation, and that it would be possessed of one of the finest and most capacious buildings that any provincial Society enjoys, still less that it would have accumulated in its Library and Museum so rich a collection of books and specimens in illustration of every branch of Natural History and Archæology, and that in some of its departments its Museum would be unequalled by that of any provincial Society, for the completeness of which it is indebted to the ready munificence of its townsmen, evoked and guided by the knowledge and untiring energy of its Curator, Mr Denny. The Leeds Philosophical and Literary Society while it claims, with pardonable pride, to be the first Institution of the kind in the County of York, rejoices to know that kindred Societies have since been established, and have flourished with more or less of success, in York, Hull, Sheffield, Halifax, Whitby, Scarborough, and Bradford, contributing largely to a taste for the cultivation of Natural History, as well as in no inconsiderable degree to its advancement and completeness by the various collections they have formed to illustrate the Zoology and Geology of their respective districts.

It was doubtless anticipated by the originators of the Society, in conformity with the practice of similar institutions elsewhere, that much of its time would be occupied with papers on the Natural History of the neighbourhood, and that it would be principally occupied with the investigation of local Geology, and of the fauna and flora of the district. Many circumstances have contributed to the nonfulfilment of this expectation, and to the attention of the Society being directed to other objects. Experience has shown that the meetings of the Society, instead of being composed mainly of the students of science, consist of a miscellaneous audience; whom papers of this kind, being necessarily occupied with technical details, are little calculated to interest while the establishment of Societies and of publications specially devoted to each particular branch of Natural History or Philosophy has attracted to them, in preference, all communications connected with their particular study.

The result has been to leave to such Societies as ours rather the popularization and dissemination of knowledge than its local investigation, and it will be found accordingly that a large and increasing proportion of the Lectures delivered before the Society has been of this character. There can be no doubt that in this way the Society has properly ministered to a growing popular want, and it may be expected, as a result of the increasing desire for scientific knowledge among all the classes of the community, that its action will be drawn more and more in this direction. The same tendency of modern education in the direction of science points to the desirableness of increasing, if possible, the facilities for access to the valuable collections of the Society, and to the endeavour to render them more and more available for public instruction. Something has already been attempted in this direction by throwing open the Museum, at a very low charge, during the day, and the numbers who avail themselves of this privilege may be taken as an indication that the boon is not under-valued.

A more important step was taken when, at a meeting of the Council held on September 27th, a sub-committee was appointed to consider whether the Society could promote science teaching in Leeds to a greater degree than it had hitherto done. The sub-committee invited the Honorary Curators to join them in considering the question submitted for their deliberation. An application from Mr. H. H. Sales, on behalf of the Yorkshire Board of Education, for free admission to the Museum upon four occasions of a class of ten school-mistresses studying Physical Geography, was recommended favourably to the Council, which cordially granted the desired permission. Mr. Sales further applied for the gratuitous use of the Lecture Theatre on six evenings, and for the loan of illustrative specimens from the Museum, the object being the delivery of lectures to artizans. The sub-committee considering this application in conjunction with the general question of the promotion of science teaching, decided that it was more desirable to offer the advantages of science classes to all sections of the community than to restrict them to a single body in the social scale. They recommended that classes should be forthwith established for teaching Geology and Zoology,

the respective collections in the Museum being used for their illustration. The sub-committee presented to the Council the following Report:—

The sub-committee of the Council appointed to consider whether this Society should take any special steps for the promotion of science teaching have given careful attention to the question entrusted to them. They invited the honorary curators to meet them in order to state their opinions upon such points as relate to the respective collections under their charge. The sub-committee feel that the present state of public feeling in favour of science teaching gives the probability of success to any well considered movement in that direction. They are also aware that not a little advocacy of technical and science education has been of a vague character, and has failed to discriminate between the teaching of the principles of science and training in their application to the industrial arts. Recognising the importance of the latter to the strength and happiness of the State, and especially to the continued prosperity of such a community as our own, still it is evident that scientific method would first provide for teaching the elements of natural science. For this procedure it would be easy to adduce many reasons besides that of an increased material prosperity. Your committee believe that it would be an error to consider the claims of only a single class of the people, and they have to recognise the fact that hitherto there has been almost a total absence of science teaching in every other class of the community, equally with that of artisans. The teaching of the science of chemistry is already provided for by the classes of several public institutions in this town. It is to certain Natural History subjects that your Committee would look as being those in which this Society may render important service through its Museum. Upon such a point, it is fitting that some of the masters of science should be consulted, and the following extracts will be found to the purpose. Professor Owen has written as follows:—"To descant on the abstract advantage of a knowledge of the works of Creation is neither requisite nor convenient to my present purpose. I may assume the general admission that collections of the several classes of such objects duly prepared, named, and arranged, so as to give the utmost facility for inspection and comparison, are the indispensible instruments in the acquisition and advance of that knowledge. . . . . I have entered more fully elsewhere (address to the British Association at Leeds, 1868), on the reciprocal advantage to both curator and museum arising out of the duty of the former to give public lectures at the museum, illustrative of the collections, and I will only here repeat my conviction that one of the applications of a national museum of natural history involves as a duty of the chief curator of each class or department, the delivery of an annual course of lectures on the classification, habits, instincts, and economical uses of such class or department of natural history."* The late Professor Edward Forbes placed upon record the following opinion:—"It is not the ignorant only who may benefit in the way just indicated. The so called educated are as likely to gain by a visit to a museum, where their least cultivated faculties, those of observation, may be healthily stimulated and brought into action. The great defect of

* "On the Extent and Aims of a National Museum of Natural History," by Professor Owen, F.R.S.

our systems of education is the neglect of the educating of the observing powers—a very distinct matter, be it noted, from scientific or industrial instruction! . . . . . Through the teaching of some of the sections of natural history and chemistry—the former for observation of forms, the latter of phenomena,—I cannot but think the end in view might be gained, even keeping out of sight altogether, if the teacher holds it best to do so, what are called practical applications. For this branch of education museums are the best text-books; but in order that they should be effectively studied they require to be explained by competent teachers." † It will hardly be needful to emphasize the concluding paragraph of Professor Forbes's opinion. The treasures of our own museum and the the opportunity for their proper classification and display are such that the earnest visitor may obtain a considerable amount of instruction. Still, it needs the direction of a skilled guide to get the clue to that harmony which science traces through each kingdom of nature. Your Committee consider that the museum will enable the Society to promote class teaching in the subjects of zoology and geology, and they recommend that arrangements be forthwith made for the delivery of courses of evening lectures upon those subjects. The Committee have considered the question of opening the Museum upon one or more evenings in the week in the interest of the large majority of our population, who cannot visit it during the day. Convinced of the importance of the influences which might thus be extended, and not more for their own sake than as helping to counteract gross and immoral attractions, the Committee feel that no one may say beforehand what would be the whole results of such a trial. Regarding the experiment as a hopeful one, they recommend that the Museum be opened to the public at the usual charge from seven to half-past nine o'clock upon Monday in each week for a period of three months, due publicity being given to this arrangement. The Committee anticipate that from time to time it may be possible to encourage classes of students not directly connected with this Society by granting free admission to the Museum. Doubtless the Council will consider any such applications in a liberal spirit.

Arrangements were made with Mr. Louis C. Miall, of Bradford, for the delivery of a Course of Twelve Lectures upon Geology. The charge for the course was five shillings, or sixpence for a single Lecture. The attendance on the first evening was about one hundred, including a large number of ladies, and this number was well maintained on most of the subsequent evenings. The Council regard this experiment as proving that such Lectures will be received by intelligent and appreciative audiences, and they trust that the scheme will receive further development from their successors.

During the past year another improvement has been introduced, with the view of giving the Zoological Museum

† "On the Educational uses of Museums," by Edward Forbes, F.R.S.

more of an educational character. An entire re-arrangement of the Mammalian Collection, according to the most generally received system of classification, has been carried out under the superintendence of the Honorary Curator of that department, Mr. Edward Atkinson, F.L.S.; who has also prepared, for the use of students, a tabular chart or synopsis of the class, exhibiting at one view the chief characters of the several sub-classes and orders it contains. This chart hangs in the centre of the room, while corresponding sections of it are appended to the cases around, containing the characteristic features of the groups of animals included in each. It is hoped that this plan will greatly facilitate the study (also much aided by the recent additions to the Collection of typical skeletons) of the modifications of form and structural affinities of this part of the animal kingdom. A similar chart is in course of preparation for the Collections of Birds and Reptiles.

For a period of about six months the Museum has been open to the public on Monday Evenings, from seven to half-past nine o'clock, and the average attendance has been 32. This number of visitors is less than might have been hoped for, and it is evident that it is not sufficient merely to open the Museum for evening attendance, but that it is desirable that some one competent for the task should at the same time, give explanations of the objects it contains. Several men of eminence in the scientific world have lately given their support to such a scheme for unfolding the stores of knowledge contained in the Collection of the British Museum, and have acted as guides to large and appreciative parties of artizans.

The annexed is a list of the Papers that have been read during the past Session.

TITLES OF PAPERS, &c.

1869.

First General Meeting, Tuesday, Oct. 19th.—Professor Huxley, LL.D., F.R.S., President-Elect of the British Association, &c., "The Ethnology of India."

Second General Meeting, Tuesday, Nov. 2nd.—The Rev. Canon Woodford, D.D., Vicar of Leeds, "On the Remoter Causes of some Historical Events."

Third General Meeting, Tuesday, Nov. 16th.—The Conversazione,

Fourth General Meeting, Wednesday, Nov. 24th.—Arthur Duke Coleridge, Esq., M.A., "On the Life and Influence of Franz Schubert," with Musical Illustrations.

Fifth General Meeting, Tuesday, Dec. 7th.—Rev. W. C. Lukis, M.A., F.S.A., "On the Pre-historic Monuments of Brittany."

Sixth General Meeting, Monday, Dec. 20th.—J. Scott Russell, F.R.S., First Lecture—"Technical Eduucation ;—What it is, and what it should be, for Masters."

Seventh General Meeting, Tuesday, Dec. 21st.—J. Scott Russell, F.R.S., Second Lecture—"Technical Education ;—What it is, and what it should be, for Workmen."

1870.

Eighth General Meeting, Tuesday, Jan. 4th.—W. F. Barrett, F.C.S., Professor of Natural Philosophy at the International College, London, "Recent Discoveries in Physical Science." First Lecture. Largely illustrated with Experiments.

Ninth General Meeting, Thursday, Jan. 6th.—W. F. Barrett, F.C.S., "Recent Discoveries in Physical Science." Second Lecture. Largely illustrated with Experiments.

Tenth General Meeting, Tuesday, Jan. 18th.—Rev. J. H. McCheane, M.A., "The Poetry of Robert Browning."

Eleventh General Meeting, Tuesday, Feb. 1st.—Rev. C. P. Eden, M.A., "The Comus of Milton."

Twelfth General Meeting, Tuesday, Feb. 15th.—Edward Filliter, M. Inst. C.E., F.G.S., "On the Sewage Question."

Thirteenth General Meeting, Tuesday, March 1st.—William Huggins, F.R.S., "On the Results of Spectrum Analysis as applied to the Heavens." First Lecture.

Fourteenth General Meeting, Thursday, March 3rd.—William Huggins, F.R.S., "On the Results of Spectrum Analysis as applied to the Heavens." Second Lecture.

Fifteenth General Meeting, Tuesday, March 15th.—Dr. Eddison, "On Sleep and Dreams."

Sixteenth General Meeting, Tuesday, April 5th.—William Farr, M.D., F.R.S., D.C.L., "International Decimal Coinage."

Seventeenth General Meeting, Tuesday, April 19th.—George Rolleston, M.D., F.R.S., Professor of Anatomy and Physiology in the University of Oxford, "On the modes of Sepulture employed by the Romans, Romanized Britons, and Anglo-Saxons, from the Fourth to the Seventh Century, in England." First Lecture.

Eighteenth General Meeting, Thursday, April 21st.—George Rolleston, M.D., F.R.S., "On the modes of Sepulture employed by the Romans, Romanized Britons, and Anglo-Saxons, from the Fourth to the Seventh Century, in England. Second Lecture.

The usual Christmas Course of Juvenile Lectures was delivered during the month of January, and comprised the following:—"On Lead in relation to its Geology, Mineralogy, and Industrial Application," by Mr. W. S. Ward, F.C.S.; "On the Transformations of Insects," by Mr. H. Denny, A.L.S.; "On the Physiology of Digestion, the Food we eat and the use we make of it," by Mr. Jessop, F.R.C.S.

The Annual Conversazione was held on the 16th November, and numerously attended, when a great variety of objects of interest was exhibited, as well as numerous works of art and scientific apparatus.

The various Collections of the Society have received many valuable contributions from its friends and members during the past year.

In Geology, the Carboniferous system has had a large accession of more than 200 specimens, in illustration of the mountain limestone of Settle, from the well-known collection of Mr. Burrow, presented by Messrs. James G. and Arthur Marshall.

In Zoology, the Society may be congratulated on the acquisition of several specimens of the greatest rarity and novelty. Foremost among them is the complete Skeleton and a stuffed specimen of the Picheciego (Chlamydophorus truncatus), from Mendoza, in the Argentine Republic, presented by Mr. E. Harry Woods, and Dr. Day. The importance of this addition to the Class Edentata may be estimated from the fact that the various European Museums contain only about eight or nine specimens, some of which are imperfect, and that the animal is considered to be nearly extinct. Another illustration of the same group is the Skeleton of the Little Ant Eater (Cyclothurus didactylus), presented by Mr. Thomas Nussey. In addition to these, may be mentioned the articulated Skeleton of the Capybara, or Water Hog of South America, and the Snapping Turtle, by Mr. Riley Briggs; the Skeleton of Apteryx Australis, by Dr. Heaton, the President; stuffed specimens of those rare birds Owen's Apteryx and Strigops, or the Ground Parrot from New Zealand, and the Skeleton of Douroucouli, by Mr. J. Metcalfe Smith; a Skeleton of the Loris Gracilis, and one of (Nycticebus Javanicus, by Mr. Nathan; several Bones of the Solitaire of Rodriguez, presented by Professor Newton, of Cambridge;

the singular Animal, the Racoon Dog, by Lord F. C. Cavendish; the Skull of Elasmognathus Bairdii, by Mr. Alderman Carter, M.P.; the Hairy-nosed Wombat, by Mr. Joseph Craven; the valuable contribution of Mr. Gellibrand, of Tasmania, consisting of Skins and Skeletons of Thylacinus Cynocephalus, Sarcoptilus Ursinus, the Ornithorynchus, the Dasyurus, several fœtal specimens and a series of Skulls of the above-named animals; a valuable series of Bones of at least three species of Dinornis, from Canterbury, New Zealand, and twenty Skins of Birds, by Mr. G. H. Moore, Glenmarck, New Zealand. In consideration of the great importance of the contributions of Mr. Woods, Mr. Gellibrand. and Mr. Moore, the Council have recommended that these gentlemen's names be added to our list of Honorary Members at the commencement of the next Session. To the above specimens, which have all been presented, must be added several species purchased by the Society, embracing the Genera Cuscus, Hemigallago, Macroscelides Centetes, Ericulus, and the singular ganoid-fish, Calamoicthys Calabaricus, and the Skeleton of an Alligator, ten feet in length.

In the Archæological and Ethnological departments, additions of more than ordinary interest have been made, embracing eighty valuable bronze implements, consisting of swords, palstaves, fibulæ, armlets, torques, celts, &c., from the bogs of Ireland and Italy, purchased by the contributions of several Members of the Society, whose names will be found in the list of Donors; also a series of Saxon, African, and Indian Crania, presented by Sir Charles Hugh Lowther, Bart.; two human skulls, and a variety of native manufactures of the Sandwich Islands, from the Rev. C. G. Williamson; the Skeleton of a native Indian, from the banks of the Essequebo, Skeletons of a Sloth and Alligator, a collection of insects, and an extensive series of fruits, seeds, gums, and articles of apparel, from the Rev. James Farrer, of British Guinea; a pair of ancient shoes and a human skeleton, obtained from a peat moss on Austwick Common, near Clapham, several coins, bronze spear head, Unguentaries, &c., presented by Mr. Farrar, of Ingleborough House; and an extensive series of primitive flint implements, from Bridlington, by Mr. Flooks.

The Library has received the various Transactions and Reports of many of the principal Societies at home and abroad, besides numerous valuable publications from public bodies and private individuals, amongst which they would especially record sixty-four vols. of Catalogues of the Natural History Collections and Ancient Inscriptions, Papyri and MSS. in the British Museum. These have been presented by the Trustees of the British Museum; the whole of which appear in the list of donations.

At the conclusion of the last year's Report a suggeswas thrown out that it might be productive of some benefit to the Society, as also a pleasant reunion, if a meeting of the old and new Members could be arranged to commemorate the termination of the fiftieth Session. In accordance with which a Commemorative Dinner took place yesterday, at the Great Northern Hotel, presided over by Mr. Baines, M.P., one of the original founders. An account of this meeting is appended to the present Report.

The annexed summary exhibits the results of the Meteorological observations derived from the monthly averages of the past year:—

1869.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January	41	29·646	3·365
February	42	29·565	2·200
March	38	29·584	1·805
April	56	29·896	1·325
May	48	29·569	4·250
June	56	29·782	0·600
July	65	29·750	0·300
August	60	29·815	1·330
September	56	29·420	3·740
October	49	29·714	1·170
November	43	29·585	0·885
December	37	29·537	4·115

The greatest degree of heat, as indicated by the Thermometer in the Sun, was 109 on the 28th August; the greatest in the shade 94, on the 28th August; and minimum 18° on the 28th December.

The greatest Barometic pressure was on the 13th March, being 30·500, the temperature of the Mercury being 57°; the least pressure was on the 13th December, being 28·680, temperature of Mercury 56°

The greatest fall of rain was on the 26th May and 11th September, being 0·700.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

STATEMENT OF RECEIPTS AND EXPENSES FOR THE YEAR.

RECEIPTS.

	£	s.	d.	£	s.	d.
Balance in Curator's hands				12	7	4
78 New Proprietary Members, at 21s.	81	18	0			
82 New Ordinary Ditto 21s.	86	2	0			
19 Old Ordinary Ditto 42s.	39	18	0			
152 Old Annual Subscribers, at 21s.	159	12	0			
28 New Ditto 21s.	29	8	0			
144 Old Annual Subscribers, at 5s.	36	0	0			
32 New Ditto 5s.	8	0	0			
Arrears	12	12	0			
				453	10	0
Rents of Cellars	50	0	0			
,, from the Geological Society	10	0	0			
,, of Lecture Room	71	14	0			
				131	14	0
Receipts for the Museum	108	8	2			
,, Conversazione	15	5	0			
				123	13	2
,, from Mr. Miall's Lectures				23	11	0
Sundries: Rev. J. A. Rhodes	100	0	0			
Sundries: Thomas Emsley, Esq.	10	0	0			
Sundries: Subscription for Bronze Implements	26	0	0			
Sundries: Sale of old Glass	2	0	0			
Sundries: Interest	0	15	0			
				138	15	0
				£883	10	6

DISBURSEMENTS.

	£	s.	d.	£	s.	d.
Repairs	59	0	10			
Taxes and Rates	3	18	2			
Insurance	15	9	8			
Coals	12	5	6			
Gas	39	18	2			
Cleaning the Hall	10	3	0			
				140	15	4
Salaries—Curator's	200	0	0			
,, Assistant Curator's	43	7	3			
,, Porter's	31	4	0			
				274	11	3
Collections—Geological	0	1	9			
,, Zoological	78	12	1			
,, Archæological	47	8	3			
,, Industrial						
,, Library	21	4	9			
				147	6	10
Postages	12	10	2			
Printing and Advertising	38	0	0			
Lectures	107	19	3			
Mr. Miall, for Geological Lectures	18	0	0			
Conversazione	44	11	2			
Commission to Collector	6	13	0			
Bankers' Commission	1	8	0			
Sundries	9	15	2			
				228	16	9
				791	10	2
Balance due to Bankers', 30th June, 1869				15	5	2
				806	15	4
Balance at the Bankers	44	14	6			
,, in Curator's hands	32	0	8			
				76	15	2
				£883	10	6

THE FIFTIETH ANNIVERSARY.

The Fiftieth Anniversary of this Society was commemorated on May the Second, by a dinner in the Great Northern Railway Station Hotel. About eighty covers were laid. Mr. EDWARD BAINES, M.P., occupied the chair, and was supported by the following gentlemen :—

Right.

Dr. Heaton, President of the Society.
The Vicar of Leeds (Canon Woodford).
Mr. Wm. Hey.
Mr. H. W. Ripley, President of the Bradford Philosophical Society.
Mr. Alderman George.
Mr. Alderman Oxley.

Left.

Rev. Charles Wicksteed.
Dr. Kelburn King, President of the Hull Philosophical Society.
Mr. Samuel Clapham.
Mr. J. E. Norris, President of the Halifax Philosophical Society.
Sir A. Fairbairn.
Mr. J. W. Tottie, Coniston Hall, Bell Busk.

Vice-Chairmen, Dr. CHADWICK and Mr. NUNNELEY.

The other tables were occupied by the following gentlemen :—

Dr. Allbutt.
Mr. Edward Atkinson.
Mr. J. W. Atkinson.
Mr. Alderman Addyman.
Mr. J. R. Asquith.
Mr. F. Baines.
Mr. Alderman Barran.
Mr. R. H. Braithwaite.
Mr. Wm. Brown.
Mr. J. P. Clapham.
Mr. S. Clapham, jun.
Mr. Joseph Cliff.
Mr. Wm. Cooke.
Mr. T. T. Dibb.
Mr. Henry Denny, Curator of the Society.
Dr. Eddison.
Mr. R. W. Eddison.
Mr. F. Eddison.
Mr. G. A. Emsley.
Mr. E. Filliter.
Mr. F. Ferns.
Mr. S. Freeman.
Mr. James Fox.
Dr. Greenhow.
Mr. Abraham Horsfall.
Mr. John Horsfall.
Mr. James Holroyd.
Rev. W. Lee Howarth.
Mr. J. W. Hill.
Mr. W. Huggon.
Mr. J. Ingham Ikin.
Mr, Wm. Illingworth.
Mr. Edward Irwin.
Mr. John Latimer.
Mr. Francis Lupton.
Mr. Arthur Lawson.
Mr. John Manning.
Mr. S. D. Martin.
Rev. J. H. McCheane.
Mr. Charles Naylor.
Mr. Alderman Nussey
Mr. Thomas Nussey.
Mr. Gustave Nathan.
Mr. Henry Oxley.
Mr. W. N. Price.
Mr. R. Reynolds.
Mr. James Rider.
Mr. T. W. Stansfield.
Mr. J. E. Smith.
Mr. James Seaton.
Mr. Joseph Shackleton.
Mr. T. P. Teale.
Mr. Joseph Thackray.
Mr. Samuel Taylor.
Mr. R. B. Turner.
Mr. W. S. Ward.
Mr. Edmund Wilson.
Mr. W. Ward, of Churwell.
Mr. C. W. Wardle.
Mr. T. Whiteley.
Mr. Thomas Wilson.

The Dinner Committee consisted of Mr. J. Ingham Ikin, Mr. Edward Atkinson, and Mr. Edward Filliter. Mr. Thomas Wilson and Mr. Richard Reynolds acted as honorary secretaries, and the council of the society as stewards. After a very handsome and admirably managed dinner had been served, the toast of "The Queen" was proposed from the chair, and duly honoured.

The CHAIRMAN then gave "The Leeds Philosophical and Literary Society, and the health of the President, Dr. Heaton." He said—I have now to invite your attention to the toast which indicates the special object of our festive gathering. But before I propose to you the prosperity which we wish to the Leeds Philosophical and Literary Society, and offer to you a few reminiscences with regard to the history of this Society, I must be permitted to express my thanks to the Council and the Members by whose favour I have the high honour to preside on this occasion. I accept that office from men with whom I have worked in days and years that have gone by with deep thanks; but at the same time I know that I am indebted for the honour to the fact that I am, with one exception, the only gentleman present who was at the original formation and foundation of the Philosophical Society. My friend, Mr. Osburn, whose learned labours so long adorned the Society, is no longer able to attend a meeting of this nature. He has sent me a note expressing his sincere regret at his inability to be with us, and referring to the deep interest which he takes in the occasion. My venerable friend, Mr. Samuel Clapham, is the only friend who, with myself, is here to represent the party who originally met in the Leeds Court-house to lay the foundation of this Society. My friend, Mr. Joseph Mason Tennant, who was present and who is the only other Member living who was present, is not able to be with us this evening. I must now offer my warmest congratulations to the Council and to the Members of this Society on the happy state of efficiency and prosperity in which I find the Society existing at this day. The Leeds Philosophical Society is, I believe, one of the oldest and one of the most successful of the Philosophical Societies which exist out of London. Fifty years have now passed since that Society was formed, and we meet in our jubilee year. But a few years had elapsed after the strange excitement of a great war had subsided when this institution took its rise; and the period that has passed over us during the existence of this Society, has, I believe, rarely been known in the history of any country in the world. A period of such great happiness, of such continued prosperity, of such advances in knowledge, in science, and in art, of such importance in constitutional liberties, of such extension in the press, of such advances in every direction, has, I believe, had no parallel, so far as I remember, in any history. I feel grateful for many things in looking back over a long period of public life—grateful for the multiplied mercies with which it has been crowned; and no less grateful that I have been permitted to live in an age of such advancement. For it is a happy thing to live when light and knowledge are advancing, when the power of man is extending, when education is increasing, and when so much order and peace have been experienced. I am able now to read to you a list, which I am sure you will hear with very great interest, of the gentlemen who assembled in the Court-house, on the 12th December, 1818, when we were considering the desirableness of forming a Society of this nature.

There had been some discussion previously in the newspapers on the subject, and several of us informed our friends of the meeting. One of the most active gentlemen to bring us together was Dr. Hunter; and we had very soon given us a name so eminent as almost to be an assurance of success. We met under the presidency of one of the best, one of the greatest men whom Leeds ever produced — William Hey — then in the eighty-third year of his age, and within three months of his death, one of the principal founders of that glorious institution, the Leeds Infirmary—and in a much earlier period of his life a member, along with Dr. Priestley, of a small and comparatively private scientific society which existed in this town, but which did not survive many years. We all felt that his sanction was of the highest possible value. All the names I have to read are names you will receive with interest. They tell of families and of individuals whom we all look back upon with just and honourable pride, Mr. Marshall, Mr. Gott, Mr. Tottie, Mr. George Banks, Dr. Thorp, Mr. John Bischoff, Mr. Thos. Blayds, Mr. W. Hey, jun., Mr. Michael Thomas Sadler, Mr. John Atkinson, Mr. Jonathan Wilks, Mr. Luccock, Mr. W. Osburn, Dr. Payne, Dr. Hunter, Mr. Chas. T. Thackrah, Mr. John Gott, Mr. West, Mr. E. S. George, Mr. S. Clapham, Mr. J. M. Tennant, and Mr. Baines, your present chairman—who was the youngest member of those assembled on that evening. Well, I need not say to those who know anything of the past history of Leeds that they will at once recognise in the list gentlemen of the greatest intellectual distinction and of the highest position in the town, gentlemen belonging to all parties and to all sects—not a few of whom rendered, before they quitted this world, the greatest service to their native town and country, and many of whom had become famous in the world of science and letters. And that meeting, thus composed, was a good augury for the future prosperity of the Society. It has borne the stamp that was then impressed upon it of impartiality, of a free, catholic, liberal, and generous spirit. The preliminary meeting was held, as I have stated, on the 11th December, 1818, and it was then resolved to form a Philosophical and Literary Society, something upon the model of those societies which then existed in the great towns of Manchester and Liverpool. The first-named society was presided over by that illustrious scientific man, John Dalton, and the latter had for its chairman the no less illustrious historian, William Roscoe. We had those societies as our models, and we formed our society very much on the basis on which they were established. It was resolved that the Society should be one for the study of natural science and polite letters. There was an inclination on the part of some to make it purely a scientific Society, but it was felt by many that this would naturally exclude a very large portion of our inhabitants, who from their position and business could scarcely devote much time to the pursuit of natural science alone, and it was therefore resolved to make the Society one of natural philosophy and literature. It was determined that the hall should be built, and as a matter of course considerable delay occurred in the commencement of the active scientific and literary operations of the Society. Whilst a beautifully classical hall, designed by Mr. Chantrell, was being built some considerable time elapsed. But some earnest members of the Society, not content to wait until the period of opening should arrive, formed themselves into a temporary association, and met either once a fortnight or once a month for the reading of papers and discussion on scientific and literary subjects. And I

am happy to remember that the association was conducted with so much spirit that the Philosophical and Literary Society may almost be said to have existed before the time when the hall was formally opened. That event took place in April, 1821. If we date the period of our existence from December, 1818, which was the preliminary meeting, or even from November, 1819, during which the temporary association was formed, then we have completed the jubilee year of our existence, but if on the other hand we take from the 6th April, 1821, when the hall and the Society were formally commenced, then we are just entering upon the jubilee year of our existence. You will, I am sure, feel what a severe temptation presses upon me to mention the names of a great number of distinguished townsmen to have belonged to this Society - many of whom have left memories of the most endearing kind—and you will also see that whilst I am thus tempted to mention, or at least to make a selection of those who benefitted us by their talents, by their money, who became our presidents and officers, who acted as our curators and read papers to us, it really would be an impossible, or at all events an unsuitable thing, to place names on a list from which so many must be omitted. You must pardon me if I make a very small and sparing selection of names, only mentioning those it would be impossible to leave unnoticed in passing by rapid strides over a period of no less than fifty years. Our first president was Mr. Marshall, and our inaugural address was, after a competition, given into the hands of Mr. Charles T. Thackrah. Mr. West and Mr. George gave jointly the first course of scientific lectures that was delivered in the institution; and I cannot mention these two gentlemen without paying my tribute of high respect to their characters, and pointing them out as having been associated for a great number of years in most honourable pursuits. In the second session of our Society we had a somewhat remarkable event in a lecture delivered by Mr. William Smith, who is sometimes called the father of practical geology. He brought his geological map of England and put it up in our hall, and gave us a lecture on the strata of the whole geology of England. It was one of the most interesting lectures to which I ever listened. I must now go on to tell you of a few distinguished men to whom I have listened in connection with this Society. I can barely mention three or four names in connection with each of the grand departments of the Society. I may tell you that we had lectures on science from one of the most eminent scientific men in England, John Dalton; from one of its ablest geologists, Sedgwick; and from Professor Phillips. Then I take a long leap and come down to a time when we have listened to the voice of Professor Owen, Sir John Herschel, and Professor Huxley; but in the interval there were a great number of other distinguished men, whom, if time permitted, I could make a selection amongst, which it would be exceedingly interesting to you to have recalled to your memory. Then we had a crowd of papers in every branch of literature —from Professors in our Universities, from distinguished authors, from great travellers, from men in the public service of their country, besides a great number of distinguished men in our own town who made literature their study. I can only give simple names here under the literary department as in the scientific department. There was James Montgomery, the poet; Dr. Whewell, Master of Trinity; Sir H. Rawlinson, Sir John Bowring, and Gilbert Scott. Here, again, I leave a vast space

untouched—a period filled up by a series of names worthy to adorn any society of this nature—men whose papers read before the Society. I myself remember with the utmost satisfaction. I dare not mention our local worthies. There are amongst them those who have been authors, those who were eloquent men, men of profound science, and very learned men—but I dare not begin the list, as I could not mention one-fourth, or even one-tenth, of those entitled to be mentioned, and the omission of some in such a multitude might give dissatisfaction and pain. I cannot help expressing on this occasion what I have often felt, and that is the extremely important debt of obligation that we have always owed from first to last to the gentlemen of the medical and surgical profession, from that eminent surgeon, Mr. Hey, who, as I have stated, occupied the chair at our first meeting, down to my friend, Dr. Heaton, the present President, and all those other gentlemen here who have been accustomed for years to attend the meetings of this Society, to whom to a vast extent we are indebted not so much for strictly scientific lectures, still less professional lectures—those are given elsewhere—but also for valuable contributions of a literary kind which have been listened to in that hall. I must be permitted just to allude to an important feature of the Philosophical Society. From the first it was intended there should be in connection with it a museum of natural history and illustrative of natural science. From the first we obtained the assistance of an able curator, the late Mr. John Atkinson, of Park-square. He has been succeeded by a series of men eminent in natural history and in every branch of science; and we have now had the pleasure, and happiness, and advantage of having, as assistant curator, for 44 years my respected and valued friend, Mr. Henry Denny whom I may call not only a zealous, not only an indefatigable, but an irrepressible curator. By his incessant vigilance and diligence, and by the self-control by which he has forced himself to make application to anybody who had anything to give to us, he has been the means of bringing together a museum which, I believe, in richness and extent has very few equals out of the metropolis, and I must not omit to mention that by many of our friends—some now living, others passed away—he was supported with an amount of liberality which seemed almost to know no stint when he set before them any object which it was highly desirable for the Society to secure. Now, I do not think you would wish me to omit another name. There was a time in the history of this Society when it had fallen into a state of deep depression. I am not sure whether the prosperity of the Mechanics' Institution and the crowd of other institutions which have arisen since the Society was founded had not something to do with this state of depression. At that time we had a good friend and a good gentleman for secretary, Mr. O'Callaghan. He is no longer with us, and is not able to be with us to-day, an absence which he regrets; but it is satisfactory to know that he his still labouring in the same vocation as he was here, filling, as he does the office of president of a similar society at Leamington. By the great skill and enterprise of Mr. O'Callaghan, the society was raised from that state of depression into which it had sunk into a state of prosperity and active existence, which, I am happy to say, it has maintained up to the present time. You are aware that our rule has been to combine in the cultivation of science the services of eminent scientific and literary men from a distance with those of our own townsmen, whose talents and acquirements were thus drawn out by their exercise for the benefit of

the community of which they formed a part. That is a combination, I trust, which will always continue. During the secretaryship of Mr. O'Callaghan, and during the presidency of my much lamented friend, Mr. Teale, a very much needed enlargement of the building of the Society took place. There had been previously an enlargement of the original building, and on the second work of enlargement and improvement no less than £11,000 was expended; and finally your buildings—I mention it for the satisfaction of the proprietary members—has cost no less a sum than £26,000. I believe, if I estimated the pecuniary value of the museum, I must put it at least at five figures, I am sure I could not say less than £10,000; but estimated with regard to its value to the Members and to Leeds and Yorkshire generally, it must be beyond any sum I can name. Some changes have taken place. Amongst them the terms of subscription have been lowered, and the admission to the museum has been fixed at the low price of one penny, a sum which Sir Rowland Hill said would command any amount of patronage which it was in the power of England to bestow. I have no doubt it is much frequented, and is doing a great amount of good. I have now to appeal not only to the Members of this Society, but to the whole of my fellow-townsmen who know anything of the history of this Society, whether it has not proved one of the most valuable institutions, as it was one of the earliest institutions, that was ever formed in the country? It is proved to have effected every purpose to which we looked forward at the time it was formed, and it has in addition answered many more ends than at the time we venture to offer. It has promoted the intellectual development of the inhabitants; it has promoted their enlarged knowledge and refined taste; it has stimulaled the studies of the young; it has led many men to devote themselves to the pursuit of science and art and literature, who otherwise might have devoted themselves to less elevating pursuits; it has allayed party and sectarian prejudices, it has promoted social harmony; it has contributed to promote the education of all classes; it has proved a parent institution, having a large offspring of institutions of a similar kind though not of the same name; it has contributed to the improvement, to the embellishment, to the prosperity of the town of Leeds; and I conscientiously believe that it has borne a fair share and proportion in the mighty advance of science and art and literature which has taken place in this and in other countries. It was six years after the formation of the Philosophical Society that the Mechanics' Institute was formed, and it was the parent of a crowd of other institutions. Those gentlemen who were most active in forming the Philosophical Society were also amongst the promoters of the Mechanics' Institution; and those lecturers, some of whom I have named, who lectured in the Philosophical Hall were amongst the first persons to lecture to the newly-formed Mechanics' Institute, intended for a still more popular object and to embrace the widest sphere that could be furnished by our whole population. I might enlarge very much upon the benefits which have been conferred upon the town indirectly by the establishment of this society; but I feel is I did so I should trespass unduly upon your time. I feel I have done my part in presenting to you this rapid sketch of the early history of the institution. And now I must connect the toast which I have to give with the name of a gentleman who will be able to tell us much as to the present position and future prospects of the Society. I mean my friend, Dr. Heaton, the President. In a bold and enterprising spirit he has done

much to provide for the scientific and literary wants of the population. He has given himself to the promotion of knowledge in all its forms amongst all classes of society. I need not dwell upon what he has done for this society. You will all know better than I can, because you have closer opportunities of observing it. I can only say that I trust the same spirit which he has exhibited may continue to actuate the presidents and council of this Society, and that you may continue to be, not only for years but for generations yet to come, one of the highest sources of improvement and of advantage which this town has ever known.

Dr. Heaton, in reply, glanced over the history of his own connection with the Society. He said that in 1845 his name first appeared in the council of the Society, and for a quarter of a century—just half the life of the Society—he had been a member of the managing body. In 1854 the council received the valuable bequest of ancient coins, of the late Mr. Baron, of Drewton Manor, together with a collection of very valuable and antiquarian books. Till then, the library of the Society had consisted of a small collection of books, crowded promiscuously on a few shelves in the then scanty council room; but this bequest made the book collection assume some importance. He then suggested to the council that they should add to their staff of officers an honorary librarian. The council recommended that this duty should be entrusted to him, and in the report of 1857 this addition to the staff first appeared. From that time he had held the office, and in the interim their library had acquired a handsome room for its reception. It had been increased to the number of 2,500 volumes, including standard works in every department of science, carefully arranged, classified, and catalogued. In 1865 he became one of their Vice-presidents, and two years ago they elected him as President. No one could lightly undertake the duty of presiding over a Society which had for fifty years held such a position as that one, and which included in its body 600 of the most cultivated and influential of the inhabitants of Leeds, and whose chair had been occupied by such men as Marshall—father and son—Sadler, Hey, Dr. Hamilton, Dr. Williamson, John Hope Shaw, Sinclair, West, Wicksteed, Dr. Hook, Dr. Barry, Teale, Hincks, and Dr. Chadwick. That he had not altogether failed, he had the pleasure to take their kindness to him that evening as an evidence, and it was to be attributed not solely to his own efforts, but to the kind co-operation of his colleagues in the council with whom he had always worked with the greatest harmony and with one common aim—namely, to promote the interests of the society. When he held a subordinate office he did what he could to aid this good cause, and when he resigned the presidential chair it was not likely that he should throw aside his interest or his endeavours in the same behalf. A description of the steps which have been taken from time to time to give enlarged scope to the operations of the Society was then given by Dr. Heaton. The first building was comparatively small and simple; it formed the nucleus of our present more noble and spacious Hall, its walls being incorporated in the existing structure. The foundation stone, laid by Benjamin Gott, is still embedded in its south-eastern corner. Twice, at least, since then, has the building been enlarged. The most important extension took place within the recollection of all present, when, upon additional ground having an area nearly equal to that of the original building, our Library, Lecture Hall, and large Mammalian Room, were erected; while both the interior and

exterior of the original building were remodelled, and adapted to the new additions. Our building, as it now stands, was opened by an inaugural lecture by Professor Owen, in December of 1862; and few who traversed the spacious and partially vacant rooms, as they then appeared during the conversazione held the same evening, under the presidentship of the late Mr. Teale, could have imagined that, in less than eight years, the additions to our collections would have been so numerous that, ere long further provision for our extension might come under consideration. Recently, when there appeared an opportunity of securing a building adjoining their hall to provide for future extension, £5,000 was subscribed on paper by a few of the members to make a provisional purchase of the estate, and thus prevent its alienation. Unfortunately the events in relation to the estate had so turned out that they were unable to carry out this intention; but the generous and ready mind was tested and answered to the test, and he had every reason to believe that, whenever the need was urgently upon them, the necessary provision would then somehow be made. He had been much struck in looking over the Reports of former years, to notice how habitually, when some necessity arose—either the enlargement of our building, or the acquisition of some important specimen—our generous friends have supplied us with the necessary means. He ought to take the opportunity to inform the members that their old friend the Rev. J. Armitage Rhodes—one of the surviving original members had sent him a cheque for his subscription (£100) to be used at the discretion of the council. He intended to ask permission to apply part of this money towards some improvements in connection with the library that were now urgently needed. The Antiquarian department had now attained an importance deserving some other place than the vestibule for its collection, and the Industrial Museum formed a new feature and one that was attracting much attention. Whether the intentions of the founders of the Society were limited to the advantages to be conferred on its own members, it was certain that the extent and importance of its possessions, and its influence and opportunities for doing good, imposed upon it claims and responsibilities of a much more extensive character, which the society has not failed to recognize. The opening of the Museum to the public at the nominal charge of one penny, many years ago, laid the treasures of the Museum open to the inspection and study of all, and the admission of not much less than 50,000 visitors in 1868 attested the success of the experiment That was no doubt an exceptional year, owing to the attraction of the Art Treasures Exhibition, but the numbers who visited the Museum were still very large. In many the first seeds of the love of nature had been sown by its inspection, many had gone distinctly for the purpose of study and investigation, and to all such the collection had been a great public benefit. Dr. Heaton next directed attention to the course of nine lectures, given at his own suggestion, by men of the first eminence in the theory and practice of art, in elucidation of the Art Treasures Exhibition at the New Infirmary; and then said that more recently the Council had very seriously considered the duty of endeavouring to apply the means the Society possessed for promoting the scientific education of the people, hitherto so lamentably deficient. During the past session twelve lectures on geology, with this object, had been delivered by Mr. Louis C. Miall, of Bradford, with an average attendance of one hundred persons. He trusted that such lectures would be continued,

and that the society would be the means of disseminating taste, and fostering the study of science far beyond the limits of its own list of members. The Society was truly a public institution, endeavouring more and more to promote the public welfare. As such they were entitled to the confidence and support of the public; and whoever contributed money or valuables, contributed, not to its members, but for the promotion of the public good of which they were only the trustees. In a country like this such a Society was especially valuable and necessary, even in a utilitarian point of view; but there was a benefit that was higher and nobler than this. The true philosopher believed that there was a good in the acquisition of knowledge for its own sake, and often the mere utilitarian would lose the very object for which alone he sought, whilst the discoveries of the man of science proved applicable to universal benefit. Thus whilst they cultivated philosophy and science for their own sakes, and for the elevating influences which they exercised upon their minds, they were sure also to be rewarded by results of practical benefit to our race. After a reference to the four previous occasions on which the members of the Society had dined together, Dr. Heaton concluded by expressing a hope that, when the next jubilee was celebrated, the Society would be able to look back upon the fifty years gone by with as much satisfaction as they experienced on that occasion, and to see as much substantial progress and real good done as they did that day. Before resuming his seat he proposed "Our National Universities," and coupled with the toast the names of Canon Woodford and the Rev. J. H. McCheane.

Canon Woodford, in responding for the University of Cambridge, said that in speaking to such a toast one had the past as well as the future to consider. The past of the universities extended to a period of something very near a thousand years if, as according to the best authorities, we may place the beginning of the University of Oxford in the ninth century, and the beginning of the University of Cambridge in the eleventh century. He supposed, as far as numbers went, the universities were at their highest pitch at the middle of the thirteenth century; for, extraordinary as the figures might seem, the latest criticism accepted the statement that there was at the time at Oxford a University population of 30,000. The main authority for that was, he believed a certain Richard of Armagh, who, in a report to the resident Pope at Avignon, stated that when he was a resident undergraduate at Oxford there was that number of students. The absolute number of students was 15,000, and the remaining 15,000 were made up by the attendants and the population; but even with that it was evident that the universities of the country must then have drawn an enormous proportion of the inhabitants within their circle. They appeared however, speedily to have declined from that high path. A little before the Reformation the number of students came to something like 3,000, and a little after the Reformation the universities were found struggling with something like 5,000. Many reasons had been suggested as to the cause of that very great diminution. The probable reason he supposed, was one or other or all of these. First, the utter confusion of the country during the Wars of the Roses; another, the crushing out of the spirit of inquiry by the entire suppression at Oxford of the Wyckliffe movement; and, perhaps, most of all that general lull which, he thought, if we looked back into the records of history, we should find so often preceded a great movement. It appeared

as if one generation or two or three generations, worked out, under God's providence, some great social problem; and that there ensued a period of torpor—a period during which the mental and physical powers of the community were, as it were, withheld, whilst those mental and physical powers were girding themselves up for another great movement. And so, possibly, it was that that great falling-off in the amount of intellectual advance in England during the period he spoke of was really the lull during which the nation was gathering up its strength for the great movement of the sixteenth century—the movement of the Reformation. Since the period of the Reformation the Universities had contracted their operations within a narrower channel, and he presumed one of the main causes of that had been the circumstance to which we owed very great results for good—he meant the collegiate system. The collegiate system sprang up and grew to a head at the very time that the great mass of students resided in the University, and perhaps the growth of the collegiate system had a great deal to do with diminishing the numbers embraced by the University. One reason why they would do so was obvious. With the rise of the colleges began immediately a very great increase of the strictness of discipline. Students then being gathered within their walls found themselves under very much closer restraint, and very much severer discipline than formerly; and so we could conceive that immediately a very great number who did not go there with any very definite purpose fell away. But what he wanted to say was that though there was certainly a great decline in the national importance of the Universities after the 13th century, yet even during the lowest period the Universities had borne a very great part in the progress of the national life. It was impossible to go through the names of those who had distinguished themselves there—distinguished themselves and the nation at large after they had left these Universities. But just think how in every department the foremost names had traced their original greatness to one of the Universities of Oxford or Cambridge. Take, amongst the poets, Spenser, and Milton, and Gray. Take amongst historians, Gibbon. Take, amongst philosophers, Bacon, and Newton, and Butler. He said nothing of theologians; and he would not say a word which might mar the harmony of the meeting by even raising up a shadow of difference of opinion. But let them go to politicians. They might surely do so; and he could not help thinking that it must ever be a very great crown upon the heads of the Universities that members of Oxford and Cambridge had been the three great statesmen of modern times—Pitt, Peel, and Gladstone. Then, if we passed to the future—and here, again, he was very anxious not to stray into any vexed question—but he did not think there was much from which we might augur a future of at least equal renown. There were two great movements which, though originating in our own time, did seem to him to promise that they were great movements. They first was—and it connected itself remarkably with what he had said—the increasing clearness with which the difference between the university and the college was now coming out before the national mind. He supposed our fathers and grandfathers had no idea of a university unconnected with the collegiate system. To go to the university was to go to college. We were now beginning to see that the college system was an entirely independent growth within the university; and we were beginning now in our legislation—both national and university legislation—to recognise that there is a district line of demarkation between the

university and a college; and he thought that the fact that the university had asserted its position as independent of the colleges, and was now in the act of receiving students whose names were not upon any college books, was a going back to that very position which, as he had said, in the middle of the thirteenth century gathered together such an enormous portion of the population within the university walls. Another point to which he wished to allude was the effort which the Universities had made to take the lead in the general education of the country by promoting local examinations. He believed the effect of this would be beyond what could now be conceived. Its effect would be very direct in linking the affections of thousands instead of hundreds with the universities—in making them the *almi matres* not of hundreds but of thousands. It would also have the enormous effect of doing away with quackery in education—in securing that whatever education was given—at whatever point it stopped—up to that point it should at any rate be sound. There was only one word more that he would add. Apart from the learning of the university there was what he might call the *ethos* of the university. The remarks he had already made would, he thought, show clearly that he certainly was not one of those who would stop the progress of reform; but he was most anxious that in reform we should not take any step which would destroy that *ethos* of the universities which really up to this point had given them so much value. He believed we should buy dearly their enlargement, if, by enlarging, we dissolved and scattered and dispersed that peculiar atmosphere which had hitherto hung about them, and which had had so very great an effect in moulding that almost noblest type of humanity, the English gentleman. But steering clear of such alterations, he believed there was opportunity for very great reform still. He believed that the Universities were quite willing to set their feet upon the path of enlightened and cautious reform and he augured for them from that and the general aspect of the time, a future as renowned as the past, and that they might be for ages to come the home of the philosophies of posterity as they had been the home of the learning of our forefathers.

The Rev. Mr. McCheane replied for the University of Oxford.

The Rev. Chas. Wickstead next proposed, "The health of the founders present." Although he had not the privilege of taking part in the formation of the Society, thirty-five years ago he was elected a member of the council, and for eighteen years he took a very active part in its affairs and filled some of its not least important offices. He was, therefore, able to speak to some extent of its effects, and it was his belief that the Society had been, in the best sense of the word, a blessing to the community. It had formed the rallying point for all the literary and scientific taste of the town, and had greatly stimulated native talent. As to its presidents, his heart and memory now recalled such men as John Hope Shaw, Richard Winter Hamilton, and Sinclair. Of the founders of the Society present, he called attention to the names of Mr. Clapham, that venerable gentleman, who at eighty-three years of age had come amongst them, Mr. Baines, and Mr. Hey. It was a most encouraging and delightful thing for two young men like what Mr. Baines and Mr. Hey were, to come forward to do their best to benefit the community in which God had placed them; and he thought that they owe1 them a debt of gratitude for the noble example they had set to young men.

The CHAIRMAN, having briefly acknowledged the toast, was followed by Mr. HEY, who, although he could scarcely claim the honour of being one of the founders of the Society, had still been a member of the committee from its commencement, and he had great satisfaction in witnessing its development. He thought that its great success might be mainly attributed to its presidents. He was, therefore, glad to propose the health of the Rev. C. Wicksteed and Dr. Chadwick, two of the past presidents.

Dr. CHADWICK, replying, said that he had the highest veneration for the Society. From his own experience of more than thirty years, he knew that it was capable of doing much good, that it had fulfilled its object, and that it was worthy of all that could be said of it.

Sir ANDREW FAIRBAIRN, proposed the next toast, "The Mayor, Corporation, and Magistrates of Leeds." Every year brought additional duties to the Corporation and the Magistrates; it might be said, with regard to the Magistrates, that, having now got a stipendiary who did all the work, they had nothing to do. There was, however, a moral responsibility which would always rest upon any person who was entrusted with high position in a large town like this, and they might depend upon it that in the course of a few years the position of the magistrates of the borough of Leeds would be far more important than what it was ten years ago, and that not only would the Mayor and Corporation have more work to do but the Magistrates also.

Mr. Alderman OXLEY, whose name (in the absence of the Mayor, who had been called off to London) had been coupled with the toast, briefly replied.

Mr. F. BAINES next gave "Success to the other Philosophical and Literary Societies."

Dr. KING, the President of the Hull Philosophical Society, responding, said that the Hull Society was three years younger than that of Leeds, and that, although it had only 400 members, it was, like the societies of Bradford and Halifax (whose Presidents had been compelled to leave the meeting), doing an immense amount of good work.

Mr. J. W. TOTTIE proposed "Applied science and the industrial arts of Leeds."

Mr. Alderman GEORGE, in acknowledging the toast, spoke of the encouragement given by the Society to inquiries connected with the industries of Leeds, referred to the rapid growth and great extent of some of the trades now carried on, and made allusion to the increase in the size and importance of the borough. In looking back to its history, he thought that there were few towns in the country that stood higher scientifically, politically, industrially, or commercially than Leeds.

Mr. Wm. BROWN proposed the health of Mr. Baines, M P., and the Chairman having acknowledged the compliment,

Dr. CHADWICK, gave the last toast on the official list—"The health of Mr. H. Denny." He spoke of Mr. Denny as being a thorough naturalist, to whom, from having made his work a labour of love, the Society owed much of its success. Mr. Denny had served them assiduously for forty-four years, and he thought the time was coming when those services should be recog-

nised in some substantial manner. Although last on the list, he thought this toast was perhaps the most important so far as the welfare and position of the Society was concerned.

Mr. DENNY replying, said that it had always been his ambition to make the museum the pride of the town and of the county, and the envy of all other museums in the kingdom. Although he had not the same strength that he had forty-four years ago, he should still continue to forward the interests of the institution to the utmost of his power.

The health of Mr. Ikin and the members of the dinner committee was next proposed by Dr. Heaton, and was duly acknowledged.

DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM.

Those marked thus (*) are Honorary Members; thus (†) Members of Society.

GEOLOGY AND MINERALOGY.

Very fine Tooth of a Species of Shark, from the Phosphate Beds of Charlestown, U.S.	Mr. Cowlam Gravely, Charlestown, U.S.
A valuable Series of Fossils, from the Mountain Limestone of Skipton	Messrs. J. G. Marshall and Arthur Marshall.
A Series of Fossils, from the Mountain Limestone of Lampton, Ontario, Canada	Mr. A. M. Watson, Widden Station, Ontario.
Very fine Molar Tooth of Elephas Primigenius, from Filey	Mr. E. Tindall.
Portion of the Tusk of Elephas Primigenius, from the Drift at Filey	†Mr. John Holmes.
Specimen of Acmite, from Norway ...	†Mr. R. Reynolds.
Two interesting Fragments of Jaws, of Hyæna Spelæa, from Brixham Cavern	†Mr. J. Manning.
Sand and wind worn Stones found in the Peninsula, between Lyells and Evans Bay, Wellington, New Zealand ...	Dr. Hector, F.R.S., Wellington.
An Elyton of a Buprestis in Stonesfield Slate, from Naunton, near Stowe on the Wold	Rev. W. F. Adey.
Two very fine Specimens of Pecten, from the Lias, at Claxby, Lincolnshire ..	Mr. Joseph Wilkinson.
Block of Coal, from Allerton Main Colliery, containing impressions of Knorria ...	Mr. Bell.
Magnesian Limestone, from Sherburn, containing Specimens of Anthacosia ...	Mr. John Dixon.

Several teeth of Ursus Spæleus, from the Caves at Sophierhole, Bavaria, in 1841	†Mr. James Farrar, J.P., Ingleborough House.
Specimens of Scoria, from the Great Crater of Kilauea, in Hawaii	Rev. C. G. Williamson, Hawaii.
Two fine specimens of Belemnite, from the Lias, at Sleaford, in Lincolnshire ...	Mr. J. Green.

ZOOLOGY.

Skeleton of the Apteryx (Apteryx, Australis)	†Dr. Heaton, (President.)
A Specimen of the Marmosette	Mr. T. Clapham.
Skeleton of the Little Ant Eater (Cyclothurus Didactylus)	†Mr. Thomas Nussey.
Specimen of the Portuguese Man of War. and Skeleton (the Rock Snake of India) Python Mollurus	Purchased by the Society.
Fine Skeletons of the Capabara (Hydrochærus Capabara) and the Snapping Turtle (Macrolemmys Temminkii) ...	†Mr. Riley Briggs.
Specimens of the Trap-door Spider, from Jamaica	Mrs. J. W. Clark, South Paths, Jamaica.
Fine Specimens of the Kakapo or Ground Parrot (Stigops habroptilus); Owen's Apteryx (Apteryx Owenii), from Preservation Islet, New Zealand, and Skeleton of the Douroucouli (Nyctipithecus Trivirgatus)	†Mr. John Metcalfe Smith.
Specimen of the Spotted Cuscus (Cuscus Maculatus); Elephant Shrew (Macroscelides intufi; Demidoffs Hemigallego (Hemigallego Demidoffii)	Purchased by the Society.
Young Specimen of the Monkey Shark Jaws of a Species of Ray and Skin of the Angel Fish	Capt. Lapage, R.N.
Specimen of Callamoichthys Calabaricus, a rare ganoid fish, from Western Africa	Purchased by the Society.
Five Specimens, adult and young of the Chinese King Crab, (Ximulus longispini)	Mr. F. Armistead, Hong Kong.
Specimens of the Banded Tanrec (Centetes Madagascarensis) common Tanrec (Centetes ecaudatus) and Ericulus nigrescens	Purchased by the Society.
Fine Skull of Bairds Tapir (Elasmognathus Bairdii), from Central America ...	†Mr. R. M. Carter, M.P.

Twenty Skins of Birds from New Zealand, consisting of Circus assimilis Halcyon vagrans; pair of Zosterops, lateralis, Platycercus pacificus, Apteryx Owenii Sphenæacus Punctatus; pair of Charadrius obscurus; pair of Hiaticula cincta Hæmatopus longirostris, Ardea flavirostris, Himantopus novæ Zelandica; pair of Porphyrio melanotus; pair of Sterna frontalis Podiceps rufipectus, Larus antipodum	Mr. G. H. Moore, Canterbury, New Zealand.
Specimen of the Hairy Nosed Wombat (Phascolomys latifrons)	†Mr. Joseph Craven.
Skeleton of the Edible Rousette (Pteropus rubricollis)	Obtained by Exchange.
Specimen of the Red-naped Kalong, from Australia (Pteropus funereus) ...	Mr. Crosthwaite, Victoria.
Specimens of the Rosy Feather-Star (Comatula rosacea)	Mr. Louis C. Miall.
Specimen of the Royston Crow (Corvus Cornix)	Mr. Todd.
Horn of Rhinoceros Oswellii, Pair of the King Bird of Paradise, fine Specimens of Dendrophyllum ramea, and of Manis Tricuspis	Purchased by the Society.
Fine Specimen of the Racoon Dog (Nyctereutes procynoides)	Lord F. C. Cavendish, M.P.
A valuable Collection of Bones of the Moa gigantea, Elephantopus, &c., from Canterbury, New Zealand	Mr. G. H. Moore, Canterbury, New Zealand.
Bones of a Species of Moa, from Wellington, New Zealand	Dr. Hector, F.R.S., Wellington, New Zealand.
Fine Skull of an Adult Tenrec (Centetes ecaudatus)	Mr. E. Gerrard, London.
Specimen of an Abyssinian Squirrel ...	Mr. G. W. Brown, Weetwood.
Specimen of the Widdah Bird	Mr. H. P. Swaine.
Fine Skeletons of the Slender Loris (Loris gracilis) and the Ku Kang (Nycticebus Javanicus)	†Mr. Gustave Nathan.
Bones of the Solitaire from Rodriguez ...	Professor Newton, F.R.S., Cambridge.
Skeleton of the Tanrec (Centetes ecaudatus)	†Mr. J. I. Ikin.
Very fine and perfect Stuffed Specimen and Skeleton of the Picheciego (Chlamydophorus truncatus), from Mendosa in the Argentine Republic ...	Mr. E. Harry Woods. and Dr. Day.

Six Specimens of the Tasmanian Wolf (Paracyon cynocephalus eight fœtal Specimens and five Skulls of do.; two Female Specimens of the Tasmanian Devil (Diabolus ursinus) two fœtal specimens and three skulls of do.; one Kangaroo Rat (Bettongia Grayii); one Beaver Rat (Hydromys chrysogaster) Platypus (Ornithorhynchus paradoxus) Dasyurus viverrinus and maculatus; Skull of mature and fœtal Wombat and fœtal Specimen of Wallaby.	*Mr. W. H. Gellibrand, Tasmania.

ARCHÆOLOGY, ETHNOLOGY, and MISCELLANEOUS.

Two Human Skulls, from the Sandwich Islands	Rev. C. G. Williamson, Hawaii.
Nine Human Skulls, consisting of two Saxon Skulls, from Dorsetshire Barrows; one Chinese, five African one from a Turkish Sepulchre and a Sepulchral Urn, from a Barrow in Wiltshire	Sir Charles Lowther, Bart., Swillington House.
A valuable Collection of eighty Bronze, Silver, and Gold Implements and Objects from Ireland and Italy, consisting of Palstaves, Celts, Daggers, Spear Heads, Swords, Fibulæ, Torques, Armlets, Bells, Spurs, Horse Bit, Strigil, Broach Stone Implements, Arrow Head, &c....	Purchased by Subscription by †James Farrer, †Francis Lupton, †R. J. Hudson, Robert Jones, John Jowitt, †F. W. Tetley, †W. H. Conyers, †Edward Irwin, †W. S. Jackson, †Sir C. Lowther, Bart., †J. W. Naylor, †R. Wood, †H. Ludolf, †William Aldam, †Thomas Whiteley, †W. E. Marshall, †Joshua Buckton, †Thomas Hall, †F. W. Kitson, †James Kitson, †Walker Joy, †R. E. Payne, †T. A. Tetley, †Thomas Walker, †John Barran.
Flint and Stone Implements and Flakes, from Lough Gur and Denmark ...	Purchased by the Society.
Primitive looking Pottery, made at Barves, in the Isle of Lewes, Hebrides, and used at the present time ... ... —	Mr. Lawson Tait, Wakefield.
Chert Flakes, found with the bones of the Moa in Native Cooking Ovens at Tre Gully in the interior of Otago and Aboriginal Stone and jade Adzes, from New Zealand	Dr. Hector, F.R.S., Wellington, New Zealand.
Casts from Human Skulls and Bones found in the Caves at Cro-Magnon, France ...	Presented by Professor Quatrefages, Paris.

A valuable Collection of Native Productions, &c., from the Sandwich Islands, consisting of Mats, Cloth, Nets and Cordage, Native Drum, various Wooden Bowls, Gourd Plate, Spittoon, Fish and Meat Dish, Stone Roller, Stone Poi Beater, Native Rings, Ornaments, Broom of Cocoa-nut Leaf Ribs, Wooden Cloth Beater, Cocoa-nut Spoons, Feather Brush, Maiden Hair, Stems used to make Plait for Hats, &c.	Rev. C. G. Williamson, Hawaii.
Sword found on the Field of Marston Moor about 120 years since	*Mr. H. Denny.
Skelton of Shermoi an Acawoi Indian, found on the banks of the Essequibo river; Indian Necklace formed of Shells; a Collection of Insects; Skulls of the Peccary; and Spotted Cavy; Skeletons of the three toed Sloth; and of the Caiman; Skins of the Red and Yellow rumped Orioles and Blue Creeper; a variety of Fruits and Seeds and Woods and native Grass	Rev. James Farrar, Chaplain to the Penal Settlement, British Guiana.
A Bellarmine or long-beard Jug, date 1672, found in pulling down an old barn attached to the Old Manor House called Point Hall, near Morley, 1868...	Mr. Samuel Arundell.
A very perfect pair of Quern Stones, found near Ripley	Mr. J. H. Ridsdale.
Pair of Shoes, from Norway	†Mr. Edward Atkinson.
An extensive Series of rudely worked Flint, Implements, from the neighbourhood of Bridlington	Mr. J. Ffooks.
Cast of the Great Seal of Oliver Cromwell	Purchased by the Society.
Remains of a Human Skeleton and pair of Ancient Shoes (probably Roman), found in Peat, at Austwick, in June, 1846; Roman Unguentary, Bronze Spear Head found in Peat on Thorne's Close, 1846, Ancient Steel Yard, found in taking down an old stone wall in Clapham, 1848; Roman Coins, found in London, 1844	Mr. James Farrar, J.P., Ingleborough House.
A Chinese Creese...	Miss Sharp.
Sword and Scabbard, from Abyssinia ...	Capt. Lapage, R.N.
Shoes of the Polish Dwarf, Count Borawlaski and General Tom Thumb ...	Mr. Wm. Trant.
Specimens of the Fruit of the Nutmeg, from Jamaica	†Mr. Thomas Harvey.
A Series of Crucibles, Assay Pots, Mufflers, Retorts and Specimens of manufactured Plumbago	The Battersea Patent Plumbago Crucible Company, London.

LIBRARY.

On Fish Poisons and Poisonous Fishes, by the Honourable R. Hill; from the Scientific Association of Trinidad ...	The Author.

CATALOGUES OF THE BRITISH MUSEUM.

Catalogue of the Bones of Mammalia, 8vo.	The Trustees of the British Museum.
Catalogue of Amphipodous Crustacea ...	
Catalogue of Seals and Whales	
Catalogue of Carnivorous Pachydermes and Edentate Mammalia, 8vo.	
Catalogue Acanthopterygian Fishes, vol. 4	
Catalogue of Fishes, vol. 5, 6. 7, 8vo. ...	
Catalogue of British Non Parasitic Worms	
Catalogue of Coleopterous Insects of the Canaries, 8vo.	
Catalogue of the Blattanæ, 8vo.	
Catalogue of Hemiptera Heteroptera, vols. 1, 2, 3	
Catalogue of Diurnal Lepidoptera Fam Satyridæ	
Catalogue of Lepidopterous Insects, parts 25 to 30, 12mo.	
Catalogue of Mollusca, part 11, Olividæ...	
Catalogue of Birds (Capitonidœ and Picidæ)	
Catalogue of Mammals and Birds of Nepal	
Specimen Catalogue of Lycænidæ, 4to ...	
Catalogue of Vases in the British Museum, 8vo., 1851	
Nummi Veteres, Civitatum Regum Gentium, et Provinciarium Londini in Museo Richardi Payne Knight, Assenati, 4to, 1830	
Engravings of Ancient Marbles in the British Museum, 11 vols., 4to... ...	
Engravings from the Gallery of Antiquities in the British Museum, 1 vol., 4to. ...	
Description of the Anglo-gallic Coins in the British Museum, 4to., 1826	
Description of the Greek Papyri in the British Museum, part 1, 4to.	
Select Papyri in the Hieratic Character, from the Collection of the British Museum, parts 1, 2. 3	
The Cuneiform Inscriptions of Western Asia, 2 vols., folio	
Inscriptions in the Hieratic and Demotic Character, from the Collection of the British Museum, 1 vol., folio	

Inscriptions in the Cuneiform Character, from Assyrian Monuments, discovered by A. H. Layard, D.C.S., folio	The Trustees of the British Museum.
Phœnician Inscriptions, from Carthage, folio	
Himgaritic Inscriptions, from South Arabia, 1 vol., folio	
Journal of the Royal Institute of Cornwall, No. 8	The Royal Institute of Cornwall.
The Radcliffe Observations, from 1868, 8vo.	The Radcliffe Institute, Oxford.
Memoirs of the Manchester Philosophical Society, vol. 3, 1868	The Manchester Philosophical Society.
Proceedings of the Manchester Philosophical Society, vols. 5, 6, 7	The Manchester Philosophical Society.
Report of the Proceedings of the Geological and Polytechnic Society of the West Riding of Yorkshire, vol. 5, part 1, 1869	The Society.
Monthly Notices of the Astronomical Society of London, 1848	The Society.
Report of the Norfolk and Norwich Museum, for 1858	The Norfolk and Norwich Museum.
Miscellaneous notes on the Old English Coinage, 8vo., by the Rev. D. H. Haigh	The Author.
On the Results of Spectrum Analysis applied to the Heavenly Bodies, a discourse delivered at Nottingham, by William Huggins, F.R.S.	Mr. Wm. Ladd, London.
Transactions of the Royal Society of Edinburgh, vol. xxv., pt. 2, 4to; proceedings of do., 1868-69	The Royal Society of Edinburgh.
Quarterly Reports of the Palestine Exploration, Nos. 1, 2, 3, 4	Mr. Edward Atkinson, F.L.S., Local Secretary for Leeds.
On the Chesil Bank, Dorset, raised bed at Portland, by H. W. Bristow, F.G.S.	The Author.
The Life of Lord Fairfax, by Clements R. Markham, F.R.G.S., 8vo.	The Author.
Transactions and Proceedings of the New Zealand Institute, vol. 1; first General Report of the Coal Deposits of New Zealand; report on the Geology of the Thames Gold Field, New Zealand, by G. C. Hutton, F.G.S.; Geological Survey of New Zealand, from 1866-7-8-9, by J. Hector, M.D., F.G.S.; Geological Report of the Lower Waikate District, by C. W. Hutton, F.G.S.; the Annual Report of the Colonial Museum and Laboratory, by James Hector, M.D., F.R.S., 1866-7-8.; Meteorological Report, from 1868, by James Hector, M.D.	Dr. Hector, F.R.S., Director of the Geological Survey, Wellington.

The Australian weekly paper	The Publishers.
Reports of the Royal Society of Tasmania; proceedings of the Royal Society of Tasmania	The Royal Society of Tasmania.
Report of the British Association for the Advancement of Science, from 1868-69.	The British Association.
The Yorkshire Archæological and Topographical Journal, part 2	The Huddersfield Archæological and Topographical Association.
The Canadian Journal, 1869	The Canadian Institute, Toronto
Proceedings of the Royal Society of London, for 1869	The Royal Society.
The Anthropological Review, No. 26; Memoirs of the Anthropological Society of London, vols. 1., 2., 3., 8vo. ...	The Anthropological Society. London.
Transactions of the Natural History Society of Northumberland and Durham, vol. 3., part 1	The Society.
Transactions of the Historical Society of Lancashire and Cheshire, new series, vol. 8., 1867-68	The Society.
Journal of the Historical and Archælogical Association of Ireland, new series, No. 5	The Association, Kilkenny.
Proceedings of the Architectural Societies of Bedford, York, Lincoln, &c., for 1868 and 1869	The Society, per the Venerable Archdeacon Trollope, Leasingham.
Resources of the Southern Fields and Forests; Medicinal, Economical, and Agricultural, being a Medical Botany of the Southern States, by Francis Peyre Porcher, M.D., 8vo., Charleston, 1868	Mr. Cowlam Gravely, Charlestown, U.S.
Proceedings of the Warwickshire Natural and Archæological Field Club, 1869 ...	The Committee.
Notice of a Mediæval Signaculum of the Anglo Saxon Saints—Edwin and Ecgwyn, by Henry Ecroyd Smith... ...	The Author.
Proceedings of the Liverpool Geological Society, for 1868-69	The Society.
Report of the Excursion to Wakefield and its neighbourhood, August 1869, by the Huddersfield Archæological Association	The Huddersfield Archæological and Topographical Association.
Report of her Majesty's Commissioners for the Universal Exhibition of Works of Industry, Agriculture, and Fine Art, held at Paris, in the year 1867, vol. vi.	Presented by the British Government.
A bound large paper copy of the Catalogue of the National Exhibition of Works of Art, at Leeds, 1868	†Mr. John Rhodes.
Proceedings of the Royal Institution of Great Britain, vol. v., part 5 and 6 ...	The Royal Institution of Great Britain.

Journal of the Royal Dublin Society, No. 38.	The Society.
The Greenwich Observations for 1867 ...	The Lords Commissioners of the Admirality.
Journal of the Royal Geological Society of Ireland, vol. 12., part 2	The Society.
Nature, for 1869	The Publishers.
Scientific Opinion, for 1869	The Publishers.
Report of the Geologists' Association for 1869; on the Chief Groups of Cephalopodes, by the Rev. Thomas Wiltshire; Report of Excursions to Oxford, Guildford, Tottenham, &c.	The Geologists' Association.
Military, Medical, and Surgical Essays, prepared for the United States Sanitary Commission, 1862-64, 4to.	
History of the United States Sanitary Commission, being the General Report of its work during the war of the Rebellion, by Chas. J. Stilli, 8vo. ...	
The Sanitary Commission of the United States Army, a succinct narrative of its works and purposes, 8vo.	Presented by the Smithsonian Institution.
History of the Brooklyn Long Island Fair, 1864, 8vo.; a Record of the Metropolitan Fair in aid of the United States Sanitary Commission, held at New York, April, 1864; a Record of the Metropolitan Fair in aid of the United States Sanitary Commission, held at Philadelphia, April, 1867, 4to....	
Proceedings of the Academy of Natural Sciences at Philadelphia, 1868 ...	The Academy.
War Department, Surgeon General's office, Washington, circular No. 2	By order of the Surgeon U.S. General Army, Washington.
Ofversigt af Kongl Vetens Kaps Akademiens Forhandlinger, vol. 22, 23, 24, 25; Lefnadsteckninger ofver Kongl Svenska Vetenskaps Akademiens efter ar 1854; Aflidna Ledamoter band Konglign Svenska Vetenskaps Akademiens Handlingar 4to., 1864-5-6-7 ...	Presented by the Academy.
Oversigt Videnskaberners; Selskabs Forhandlinger, for 1866-7-8-9	Fra del Kongelige Danski Kjobenhoven.
Annual Report of the Trustees of the Museum of Comparative Zoology, at Harvard College, 1868; contributions to the Fauna of the Gulf Stream at great depths, 2nd series, by G. L. F. Pourtales; various Pamphlets relating to the Harvard University	The Harvard University.

Annual Report of the Smithsonian Institution for 1867; proceedings of the National Academy of Science for 1866-7 Catalogue of the Orthoptera of North America, by Samuel H. Scudder ...	The Smithsonian Institution, Washington, U.S.
Proceedings of the Essex Institute, vol. 5, Nos. 7, 8, 8vo.	The Essex Institute, U.S.
Proceedings of the American Philosophical Society, vol. 10, part 77 and 78 ...	The American Philosophical Society.
Transactions of the American Philosophical Society, vol. 12, part 3; transactions of the Boston Society of Natural History, vol. 12, parts 1 to 17, 4to.; memoirs of the Boston Society of Natural History, vol. 1, part 4, 4to.; occasional papers of the Boston Society of Natural History, 8vo.; Entomological Correspondence of C. M. Harris, 8vo.	The Boston Society of Natural History, U.S.
Mettheilungen der K. K., Geographischen Gesellschraft in Wein, 1868-69, vol. 12., Band ... ... Mettheilungen der Kaiserlich-Koni glichen Geographischen, Gesellschalft X Jahrgang, 1866 and 1867; Redigert von Franz Fœtterle...	The Geographical Society of Vienna, by M. A. Becker.
Index Fungorum Britannicorum, by M.C. Cooke	Mr. Scorah.
Le Glacier de Borum par sa Sexe, 4to.; Etudes sur les Affinities Chemiques par C. M. Guldhere, N. P. Waage; Traite Elementaire des Fonctions Elliptiques par Dr. O. J. Broch, 8vo.; Thomas Saga Erkebyshop Fortœlling om Thomas Beckett, Erkebishop of Canterbury, to Bearbeidelser sant fragmenter of C. R. Unger, 1869; Om Underbergot ved Kingsberg og om Guldets Forekomst sammesteds af; Th Hiortdahn, 1868; Forslag Fee En Forandut ordining af Det Hoiere, Skolevæsen, 8vo., 1867 ...	The Academy of Science, Christiana.
Aristotelis, A. D. Nico Machum Filium de Moribus, quæ Ethica Nominantur Libri decum loachimo Perionio Cormœriace nointerprete, 1510	Mr. Howgate
Odontography, or a treatise on the comparative Anatomy of the Teeth with 168 plates, by Richard Owen, L.L.D., F.R.S., 2 vols., Royal 8vo.	†Mr. J. I. Ikin.
Weekly Means of Meteroological Obvervaions, taken at Wellhead, Halifax, for theyears 1866-67-68-69, by John Waterhouse, F.R.S.	Mr. Waterhouse, F.R.S., Halifax.

LIST

OF

OFFICERS, COUNCIL, AND MEMBERS.

1870-71.

OFFICERS.

President	John Deakin Heaton, M.D., F.R.C.P.
Vice-Presidents	Charles Chadwick, M.D., D.C.L., F.R.C.P. * Thomas Nunneley, F.R.C.S.
Treasurer	Henry Oxley.
Honorary Secretaries	Thomas Wilson, M.A. Richard Reynolds, F.C.S.
Honorary Curator in Geology ...	J. G. Marshall, F.G.S.
Honorary Curators in Zoology ...	Edward Atkinkon, F.L.S. T. C. Allbutt, M.A., M.D., F.L.S., F.S.A.
Honorary Curator in Antiquities and Works of Art, &c.	Thomas Nunneley, F.R.C.S.
Honorary Librarian	John Deakin Heaton, M.D. F.R.C.P.

The above officers, and the following Gentlemen, compose

THE COUNCIL.

John Edwin Eddison, M.D.
E. Filliter, M. Inst. C.E., F.G.S.
T. M. Greenhow, M.D.
Joshua Ingham, Ikin, F.R.C.S.
Rev. H. Temple, M.A.
Rev. J. H. M'Cheane, M.A.
John Manning.
T. W. Stansfeld.
William Sykes Ward, F.C.S., F.M.S.
Rev. Canon Woodford, D.D.

General Curator and Assistant Secretary.....Henry Denny, A.L.S.

* In consequence of the death of Mr. Nunneley since the Annual Meeting, the following alterations have taken place in the Officers and Council :—

Rev. Canon Woodford, D.D., Vice-President.
John Edwin Eddison, M.D., Honorary Curator in Antiquities and Works of Art.
Rev. John Gott, M.A., Member of Council.
Rev. Dr. Henderson, Member of Council.

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

W. Aldam, *Frickley Hall, Doncaster.*
William James Armytage, *Farnley.*
Robert Arthington.
John William Atkinson.
Edward Baines, M.P.
John Barran, *Chapel Allerton Hall.*
James C. Battye.
*William Beckett.
William Coglan.
J. D. Birchall.
*Samuel Birchall.
Henry Broadhead.
James Brown, *Rossington* (2 shares)
Samuel James Brown (2 shares).
*John Burton.
Edmund Calverley, *Oulton* (2 shares)
C. H. Charlesworth.
Henry Chorley.
Samuel Clapham (2 shares)
John W. Cudworth.
William Beckett Denison.
Thomas Townend Dibb.
John Edwin Eddison. M.D.
Robert John Ellershaw.
John Ellershaw.
Christopher Empson.
Robert Lawson Ford.
Thomas Willington George.
*John Goodman.
*John Gott (2 shares)
William Ewart Gott (3 shares)
Rev. John Gott, M.A. (2 shares)
Thomas Michael Greenhow, M.D.
John D. Heaton, M.D., F.R.C.P.
William Hey, F.R.C.S.
Joseph Hirst, *Bramley.*
Walter Holdforth.
Joseph Holt.
Abraham Horsfall.
William Ingham.
Constantine Ingham.
*John Jowitt.
John Jowitt, *Harehills Grove.*
William Glover Joy.
Thomas John Kinnear, M.A.
John Latimer.
Frederick John Leather.
John Darnton Luccock.
Darnton Lupton.
Francis Lupton.
Charles Makins, *London.*
J. G. Marshall, F.G.S. (2 shares).
Henry Cowper Marshall, *Weetwood.*
Arthur Marshall, F.G.S., *Headingley.*
Reginald Dykes Marshall, *Cookridge Hall.*
Victor Alexander Ernest Marshall B.A.
Edmond Henry Marshall, *Weetwood.*
*Thomas Nunneley, F.R.C.S.
Rev. J. Armitage Rhodes, M.A. *Carlton, Pontefract.*
John Rhodes.
John Shepherd.
Henry Stooks Smith.
John Metcalfe Smith, *Kirkstall Grange.*
George Tatham.
*Thomas Pridgin Teale, M.D., F.R.S., F.L.S.
John William Tottie, *Coniston Hall, Bell Busk.*

Thomas Greenwood Teale.
James Butler Waite.
Edward Walker.
William Sykes Ward, F.C.S.
*Richard Basset Wilson.

* Members deceased, whose shares have not been transferred.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

Daniel Hopkin Atkinson.
Edward Atkinson, F.L.S., M.R.C.S.
Edward Baines, M.P.
Frederick Baines.
E. B. Wheatley Balme, *Mirfield.*
Rev. Alfred Barry, D.D.
*William Beckett (6 shares)
Joseph Brooks Bilborough.
Edward Birchall.
John Bray.
S. J. Brown (5 shares).
William Brown, *Bardon Grange, Weetwood* (2 shares).
George Buckton.
Joshua Buckton.
Isaac Henry Burkill.
J. O. Butler, *Burley.*
Charles Chadwick, M.D., D.C.L., F.R.C.P.
William Chadwick, *Arksey.*
Joseph Cliff.
W. H. Conyers.
*John Cooper (2 shares).
Samuel T. Cooper.
John Crofts.
Capel Augustus Curwood.
Joseph Craven.
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PHILOSOPHICAL & LITERARY SOCIETY.

THE ANNUAL REPORT

For 1870-71.

Se Le/

THE FIFTY-FIRST REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL & LITERARY

SOCIETY,

AT THE

CLOSE OF THE SESSION 1870-71.

Read at the Annual Meeting, May 2nd, 1871.

LEEDS:
PRINTED BY CHARLES GOODALL, 16, WOODHOUSE LANE.
MDCCCLXXI.

IMPORTANT RULE

RESPECTING THE PROPERTY OF THE SOCIETY.

PASSED OCTOBER 8TH, 1860.

That in the event of a dissolution of this Society, its Property and Effects, whether real or personal, shall not be disposed of for the personal benefit of the Members, but shall be appropriated in such manner for the advancement of Science, Literature, or Art, in the Town of Leeds, as shall be determined by a Majority of the Members at an extraordinary Meeting to be convened for that purpose. But that no dissolution of the Society shall take place without the consent, in writing, of a majority holding not less than two-thirds of the Proprietary Shares.

FORM OF A BEQUEST TO THE SOCIETY.

Every person desirous of bequeathing to the Society any Sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form:—

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REPORT OF THE COUNCIL

AT THE CLOSE OF THE

FIFTY-FIRST SESSION.

THE Council have again to announce that the position of the Society has been materially improved during the past year. 132 New Members and Subscribers have been added since the last Annual Meeting, whilst the losses from all causes amount to 45.

The Accounts, made up as usual to the 30th of June, will be printed with this Report, and will shew the financial position of the Society. It will be seen that there has been a greatly increased expenditure on Lectures, and if it be the wish of the Society to maintain the present high character of this department of our operations, a permanent increase of expenditure may certainly be contemplated. To meet this demand and at the same time to maintain the other branches of the institution in full efficiency, an alteration of the Rules will be submitted to this Meeting, by which it is proposed to increase the Subscription of Ladies and Junior Subscribers from 5s. to 7s. 6d. When it is recollected that this payment admits not only to the Lectures and Papers but also to the Museum and Conversazione, the Council feel sure that the alteration will be cheerfully adopted. The Council would further point out to their supporters how much they may contribute to the prosperity and efficiency of the Society by an active canvass among their friends for New Members and Subscribers.

The Council have again much pleasure in reporting a donation of £10 from T. Emsley, Esq., of Burley-in-Wharfedale. A list of many valuable donations to the Museum and Library is appended to this Report.

During the winter the following Papers have been read before the Society:—

TITLES OF PAPERS, &c.

1870.

First General Meeting. Tuesday, Oct. 18th.—William Hepworth Dixon, Esq., "The Great West: the Feeding Ground of the Anglo-Saxon Race."

Second General Meeting. Wednesday, Nov. 2nd.—Professor Seeley, M.A., Professor of Modern History in the University of Cambridge, "Schiller."

Third General Meeting, Tuesday, Nov. 15th.—William Carruthers, Esq., F.G.S., British Museum. "The Vegetation of the Coal period, and its relation to the plants of the present day."

Fourth General Meeting. Tuesday, Nov. 22nd.—R. A. Procter, Esq., B.A., F.R.A.S. First Lecture, "Saturn and its System, and the Lands and Seas of Mars."

Fifth General Meeting, Thursday, Nov. 24th.—Mr. Procter's Second Lecture, "Stars and Star Systems."

Special General Meeting, Tuesday, November 29th.—Professor Seeley's Second Lecture, "Goethe."

Sixth General Meeting, Tuesday, December 6th.—The Conversazione.

Seventh General Meeting, Tuesday, December 20th.—Rev. H. B. Tristram, M.A., LL.D., F.R.S., "The Story of Past Geological Ages, as told by the Living Forms of Palestine."

Eighth General Meeting, Friday, December 30th.—Professor Huxley, LL.D., F.R.S., President of the British Association, "On Yeast."

1871.

Ninth General Meeting, Tuesday, January 10th.—W. F. Barrett, Esq., F.C.S., Professor of Natural Philosophy at the International College, London. First Lecture, "Faraday's Electrical Discoveries."

Tenth General Meeting, Thursday, January 12th.—Mr. W. F. Barrett's Second Lecture, "Faraday's Electrical Discoveries."

Eleventh General Meeting, Tuesday, January 17th.—Anthony Trollope, Esq., "Prose Fiction as a Rational Amusement,"

Twelfth General Meeting, Wednesday, January 25th.—Professor Rev. Sir Frederick Gore Ouseley, Bart., M.A., Mus. D., Oxford. First Lecture, "History of Music," (vocally illustrated.)

Thirteenth General Meeting, Friday, January 27th.—Professor Ouseley's second Lecture, "Music, a Science as well as an Art."

Fourteenth General Meeting, Tuesday, February 7th.—Rev. Charles Wicksteed, B.A., "Recollections of Continental Travel a Generation ago."

Fifteenth General Meeting, Tuesday, February 21st.—Edward Burnett Tylor, Esq., V.P. of the Ethnological Society of London, "Primitive Civilization."

Sixteenth General Meeting, Tuesday, March 7th.—William Sykes Ward, Esq., F.C.S., "On Acoustics and Musical Instruments," with Illustrations.

Seventeenth General Meeting, Thursday, March 9th.—Mr. Sykes Ward's Second Lecture.

Eighteenth General Meeting, Tuesday, March 21st.—John Birkbeck Nevins, Esq., M.D., President of the Liverpool Philosophical Society, "On the Changes observed in Plants during the Ripening of Seeds."

Nineteenth General Meeting, Tuesday, April 4th.—James Glaisher, Esq., F.R.S., &c., "Rain, how derived, various forms under which it appears, how measured, its different amount in different places, monthly and annually, its importance in supplying towns with water."

Twentieth General Meeting, Tuesday, April 18th.—L. C. Miall, Esq., "Early History of Domestic Animals."

The Council believe that no previous Session has been marked by so many valuable and attractive Lectures. The interest displayed by the Members and Subscribers has been encouraging, and will doubtless stimulate the Council to renewed exertions in the future so as to maintain the present high character of the Lecture Card.

In the last Report it was announced that a course of Elementary Lectures on Geology had been delivered under the auspices of this Society to a mixed audience, composed

partly of Members and partly of strangers. The experiment has been repeated this winter, and a course of thirteen Lectures on Botany by Mr. L. C. Miall is now in progress. The Council have been supported in this endeavour to spread scientific knowledge by the attendance of about 100 persons weekly.

Two months ago the able and valued Curator of the Society, Mr. Henry Denny, was removed by death. He had served the institution most assiduously for 45 years, and every person connected with the Leeds Philosophical and Literary Society is aware how greatly the Museum, in all its branches, increased under his care and in consequence of his zealous labours. Mr. Denny was a man of extensive scientific knowledge and well known to the students of certain recondite branches of Natural History by the monographs which he published in his younger days. He was the first Stipendiary Curator of the Leeds Museum, with which his name will always be connected.

Shortly after Mr. Denny's lamented death a Subscription was set on foot by the Council and many of the oldest friends of the Society with the object of raising a fund for the maintainence and education of his large family. A considerable sum has already been subscribed, and the Council do not doubt that the movement will receive the general support of the Members of the Society.*

The vacancy occasioned by Mr. Denny's death was filled up on April 5th by the election of Mr. L. C. Miall, late Curator to the Bradford Philosophical Society.

The total number of persons admitted by payment to the Museum during the past year is 34,467. It has been found necessary to abandon for the present the opening of the Museum in the evening in consequence of the small attendance on these occasions.

The Annual Conversazione was held on December 6th, when the large number of Members and Subscribers that

* Further Subscriptions will be received by Dr. Eddison, 19, Park Square; or by the Bankers, Messrs. W. Williams Brown, & Co.

filled the Hall enjoyed the display of a rich collection of works of Art and Science.

Annexed is a summary of the Meteorological observations taken at the Philosophical Hall in 1870.

1870.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January	37·6 Fah.	29·808	1·695
February	37·0	29·753	1·295
March	40·7	29·893	1·510
April	50·3	29·936	0·455
May	54·8	29·839	0·905
June	59·3	29·917	1·430
July	64·8	29·821	0·810
August	61·6	29·841	1·520
September	55·4	29·871	0·620
October	48·6	29·509	4·850
November	39·6	29·613	1·705
December	34·7	29·753	2·670

The mean monthly temperature was 48·7°.

The mean monthly height of Barometer was 29·796 inches.

The total rainfall for the year was 19·465 inches.

The greatest degree of heat, as indicated by the Thermometer in the Sun, was 110° on the 11th August; the greatest in the shade 92°, on the 23rd July; and minimum 12°, on the 25th December.

The greatest Barometric pressure was on the 1st December and 1st of October, being 30·550, the temperature of the Mercury being 58° in both cases; the least pressure was on the 23rd October, being 28·580, temperature of Mercury, 59.

The greatest fall of rain was on the 7th October, being 1·190.

The following resolution, of which due notice had been given, was adopted by the Annual Meeting:—

"That Rule 13, Chapter I, be repealed, and the following substituted for it:—

Ladies and Gentlemen (the latter being under 21 years of age), being relations of, and resident in the house of any Member or Subscriber, may attend the reading of Papers and Lectures, upon paying annually, in advance, a Subscription of Seven Shillings and Sixpence."

In order to prevent the entrance of unqualified persons the Council find it necessary to require, on all occasions,

the production of the Ticket of Membership or Subscription at the entrance. The large number of Members and Subscribers renders it impossible for the attendant to recognise all those who have the privilege of admission. The Council hope that no inconvenience will result from this regulation, which is found indispensable to protect the interests of the Society.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

STATEMENT OF RECEIPTS AND EXPENSES FOR THE YEAR 1870-71.

RECEIPTS.

	£	s.	d.	£	s.	d.
Bankers' Balance	44	14	6			
Curator's ditto	32	0	8			
				76	15	2
84 New Proprietary Members, at 21/	88	4	0			
76 New Ordinary ditto 21/	79	16	0			
17 Old Ordinary ditto 42/	35	14	0			
160 Old Annual Subscribers, at 21/	168	0	0			
49 New ditto 21/	51	9	0			
159 Old Annual Subscribers, at 5/	39	15	0			
77 New ditto 5/	19	5	0			
Arrears	11	11	0			
				493	14	0
Rents of Cellars	50	0	0			
,, from the Geological Society...						
,, of Lecture Room	54	10	0			
				104	10	0
Receipts for the Museum	148	12	3			
,, Conversazione	17	15	0			
				166	7	3
Sale of Catalogue						
Sundries	66	3	7			
Interest	0	13	0			
				66	16	7
Balance due to Bankers				34	11	0
				£942	14	0

DISBURSEMENTS.

	£	s.	d.	£	s.	d.
Repairs..	95	9	8			
Taxes and Rates	3	17	1			
Insurance	13	15	0			
Coals	9	16	6			
Gas	9	9	2			
Cleaning the Hall	0	19	0			
				133	6	5
Salaries—Curator's	200	0	0			
,, Assistant Curator's ..	55	15	6			
,, Porter's	58	3	9			
				313	19	3
Collections—Geological	0	7	0			
,, Zoological	63	10	5½			
,, Archæological	8	17	6			
,, Industrial						
,, Library	30	14	10			
				103	9	9½
Postages	9	14	4½			
Printing and Advertising	33	9	3			
Lectures	206	12	6			
Conversazione	48	4	8			
Commission to Collector	6	2	9			
Bankers' Commission	0	12	0			
Sundries	56	4	5½			
				361	0	0
Balances—Bankers'						
,, Curator's	30	18	6½			
				30	18	6½
				£942	14	0

LIST OF DONATIONS AND ADDITIONS

TO THE SOCIETY'S

MUSEUM & LIBRARY,

1870-71.

GEOLOGY AND MINERALOGY.

Two pieces of Slate from Eskdale, Cumberland, exhibiting faults ... ... Pair of Horns of Megaceros, Isle of Man ... ... Frontal Bone and Horn-cores of Bos primigenius, dug out of a peat moss at Broadmire Moss, Thurston Field, near Carlisle, with scapula, 3 ribs, atlas, and axis of the same ... ... Skull and Horn-cores of Bos primigenius, dug out of a peat moss at Hawick. Tooth of Mastodon, Ohio	Mr. H. C. Marshall.
Loftusia persica and Saccamina Carteri from Mountain Limestone, Elfhills, Northumberland	Natural Hist. Soc., Northumberland, Durham, and Newcastle.
Bauxite (Aluminate of Iron) from Dept. of Var, France ... ... Saccammina Carteri from Carboniferous Limestone, Northumberland. Two specimens, one polished ... ... Parkeria. Cambridge Greensand ...	Mr. H. B. Brady, F.L.S., Newcastle.
Blocks of Coralline and Red Crag, Suffolk	Rev. J. W. Smith, Ipswich.
Sigillaria Organum (Methley)	Mr. John Holmes.
Fossil Fish (Acrolepis), from Ironstone Nodule in the roof of the Halifax Hard Bed, Rawden	Rev. W. Hunt Painter, Derby.

ZOOLOGY.

Horns of Red Deer, from a peat moss at Ennerdale, near Whitehaven	Mr. H. C. Marshall.
Lamina of Whalebone, 11 ft. long ...	
Molar Tooth of Elephant	Mr. James Bapty.
Tusk of Hippopotamus	
Rhea Americana	Mr. R. B. Jowitt.
Fine adult male Orang, from Borneo ...	Mr. O. Nussey.
Tufted-tail Porcupine (Atherura Africana), from Fernando Po.	The Society.
Nearly complete collection of British Lepidoptera, in handsome Mahogany Cabinet	Mrs. Frederick Buckton.
Adult Female Orang, from Borneo. Skeleton of same individual	Mr. John Barran, Mayor of Leeds.
White Sparrow (Passer domesticus) ...	Mr. G. M. Angas, Beeford, Lowthorpe, Hull.
Skin and Skeleton of male and female Tiger-cats	Rev. Thomas Farrar, British Guiana.
Skin and Skeleton of Two-toed Sloth (Cholœpus didactylus)	
Skin and Skeleton of male Crab Dog (Thous cancrivorus)	
Two Skulls of Tapir (Tapirus terrestris)...	
Skull of Bush-master Snake	
Skin of Snake	

ARCHÆOLOGY AND ETHNOLOGY.

Head of Maori, named Ingolee, aged 25 years, killed in battle, 1825	Mr. H. C. Marshall.
Another Head of Maori	
Tatooing Instruments, from New Zealand	
Very fine Græco-Phœnician Vase, 2 feet 2½ inches high, found among tombs in Laimia, Cyprus...	Mr. W. Aldam.
Fan of Satin-wood, from Scinde, and Chinese Fishing Rod	Mr. James Bapty.
Wooden Mask, made by the Sticker Tribe of Flat-head Indians	Mr. Arthur Marshall.
Do., Flat-head Indians	
Wooden Idol, do.	
Wooden Bowl, Comox Indians	
Do., Flat-head Indians	
Flint Implement. Poitou	
Five Flint Implements. Suffolk ...	
Ancient Spur	

Græco-Phœnician Patera, Cyprus ...	Mr. J. I. Ikin.
Casts of Sculptured Bones, from the Caves of Dordogne	Mr. Augustus Franks.
Sixty Greek Coins from Leucadia, Santa Maura	Mr. J. Wood.
Very fine Syenite Axe-head, from Michigan, U.S.	Mr. R. Terry, East Ardsley.
Vase of Nolan Ware	Mr. W. Hebblethwaite.
Two Bellarmines or Stone Jars, from Wakefield and Lincoln	The Society.
Jade Adze	Mr. R. C. Battye, Yeadon.
Jade Implement, from Malaraway, Australia	
Flint Implements, from Flamboro' and Neighbourhood	Mr. J. J. Barugh, Charleston.
Flint Implements, from Adel	Mr. Twigg, Adel Reformatory.
Casts of Ivory Carvings, prepared for the Arundel Society, in 14 glazed frames...	Mr. Edward Hailstone, Walton Hall, near Wakefield.
Model of a Brick House, made by an Arrawack Indian, and containing, in miniature, every article in daily use ...	Rev. Thomas Farrar, H.M. Settlement, British Guiana.
Two specimens of Cassava Meal, Baking Pan, 6 Cassava Cakes, 2 Pepper Pots, 2 *Goglets*, *Matapi* or Cassava Strainer, 2 Fans, Blow Pipe, 2 War Clubs, *Matuli* or Cassava Sieve, Grate for Cassava Roots, *Mannary* or Sifter, *Quake* or Basket, 2 *Barbecots*, Gutter for Cassava Juice, Conjurer's *Shaak-shaak*, 6 *Shaak-shaaks* used in dances, 6 *Macquari* Whips used in funeral dances, Bow, 4 Arrows, 4 Hammocks, Models of Tent-boat, Paddles, Figures, &c., 2 Staves of "Letter-wood." ...	
Greenstone Hammer, found in the Donor's Grounds	Rev. J. Fountayne Wood-yeare, Ankhill.

TECHNOLOGY.

Specimens illustrating the process of the Manufacture of Beet-root Sugar, at Lavenham, in Suffolk	Mr. W. Hebblethwaite.
Brazilian Pebble, as used for Spectacles ...	Mr. R. Reynolds.
Collection of Beetles, used for Ornamental purposes	The Society.

MISCELLANEOUS.

A Gourd, Catalian Growth	Mr. W. Hebblethwaite.
Five Dollar Note of the Confederate States, 10 Cent Note of the United States	Mr. John Marshall.
Two Crab-nut-tree Seeds. Snake Nuts...	Rev. Thomas Farrar, British Guiana.

PUBLICATIONS.

Smithsonian Contributions to Knowledge, vol. xvi. ... ... Smithsonian Miscellaneous Collections, vols. viii. and ix. ... ... Annual Report, Smithsonian Institution, 1868	The Smithsonian Institution.
Proceedings of the Essex Institute, vol. vi., pt. 1868 ... ... Bulletin of the Essex Institute, vol. i., 8vo., 1867	The Essex Institute.
Geological Report of the Exploration of the Yellowstone and Missouri Rivers, by Dr. F. Van Hayden, 1859-60, 8vo. Washington. ... ... Preliminary Field Report of the United States. Geological Survey of Colorado and New Mexico, by F. Van Hayden, U.S., Geologist, 8vo. Washington, 1867	Dr. F. Van Hayden, Washington.
Statistics of Minnesota for 1869... ... Minnesota, its progress and capabilities, for 1860-61 ... ... Proceedings of the 3rd Annual Meeting of the Minnesota Editorial Convention, 1869. Annual Report of the Minnesota Historical Society for 1868-69 ... Report of the Exploration in the Mineral Regions of Minnesota, during the years 1848, 1859, 1864, by Col. C. Whittesley	The Minnesota Historical Society.
Proceedings of the American Philosophical Society, vol. xi., Nos. 82 and 83 ... Transactions of the American Philosophical Society, 1870	American Phil. Society.
Proceedings of the American Academy of Arts and Sciences, vol. viii.	American Academy of Arts and Sciences.
Narrative of a Journey to Musardu, the capital of the Western Madingoes, by Benjamin Anderson	Smithsonian Institute.

Proceedings of the Boston Natural History Society, 1869	Boston Natural History Society.
Monuments and Ornaments of Remote Ages, by J. B. Waring. 4to. ...	Mr. W. B. Denison.
Proceedings of the Academy of Natural Science of Philadelphia, for 1869 ...	Academy of Natural Sciences of Philadelphia.
Report of the Invertebrata of Massachusetts. Second Edition, comprising the Mollusca, by Augustus A. Gould, M.D. Edited by W. G. Binney	Boston Society of Natural History.
History and Antiquities of the Parish of Halifax, by the Rev. John Watson, pt. 1 and 2. Second Edition, with corrections, by F. A. Leyland	Mr. F. A. Leyland.
Annual Report of the Hull Lit. and Phil. Society, 1867-68	The Hull Lit. and Phil. Society.
Nordiske Oldsager i det Kongelige Museum i Kjöbenhaven ordnede og forklarede af J. J. A. Worsaae ...	The Society.
Catalogue of Satirical Prints. Div. 1., vol. i.	Trustees of the British Museum.
Catalogue of Shield Reptiles. Part 1. Supplement	
Catalogue of Lithophytes	
Hand List of Birds. Parts 1 and 2 ...	
Guide to Exhibition Rooms	
„ Manuscripts	
„ Minerals	
Index to Minerals	
Cuneiform Inscriptions of Western Asia, vol. iii.	
Catalogue of Lyric Manuscripts by W. Wright, LL.D.	
Catalogue of the Greek and Etruscan Vases, vol. ii.	
Catalogue of the Specimens Dermaptera Saltatoria, part 4, by Francis Walker, F.L.S.	
Catalogue of Monkeys, Lemurs, and Fruit-eating Bats, by Dr. J. E. Gray, F.R.S.	
Catalogue of Oriental MSS., part 2 ...	
„ Dermaptera Saltatoria, pt. 5	
Hand List of Birds, part 3	
Guide to 1st Vase Room	
Catalogue of Meteorites	

Memoirs of the Royal Astronomical Society, 1868-9. Part 1 and 2, and vol. xxxviii., 1871 ... ... A general Index of the first 29 vols. of the monthly notices of the Royal Astronomical Society... . ... Solar Eclipse of August 18th, 1868 ...	Royal Astronomical Society.
Greenwich Observations, 1868. 4to. ... Breen's Corrections of Bouvard's Elements of Jupiter and Saturn, 1868	The Lords of the Admiralty.
Copy of the Dublin Journal for Oct. 18th, 1794	Mr. E. Irwin, J.P.
Mineral Statistics of the United Kingdom for 1869 ... ... Catalogue of the Publications of the Geological Survey	The Director General of Geological Survey.
Catalogue of Ivory Carvings prepared for the Arundel Society	Mr. Edward Hailstone, Walton Hall, near Wakefield.
Journal of the Anthropological Institute, January to July, 1871...	
Debrett's House of Commons and Judicial Bench	Messrs. Day & Son.
Canadian Journal, 1870-1	Canadian Institute.
Proceedings of the Academy of Natural Sciences, of Philadelphia, 1870 ...	
Preliminary Report of Census of 1871 ...	Dr. William Farr.
Dr. Darwin's Botanic Garden, 2 vols. ...	Dr. Heaton.
Report of British Association, 1870 ...	British Association.
Weapons of War. Being a History of Arms and Armour, from the earliest period to the present time. By Auguste Demmin.	The Society.
Series of Descriptive Labels for Invertebrata and Minerals	Liverpool Free Library and Museum.

LIST OF OFFICERS AND COUNCIL,

1871-72.

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Thomas K. Kirkby.
R. T. Land.
Arthur T. Lawson.
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1479

LEEDS

PHILOSOPHICAL AND LITERARY SOCIETY

THE ANNUAL REPORT

For 1871-72.

THE

FIFTY-SECOND REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL & LITERARY

SOCIETY

AT THE

CLOSE OF THE SESSION 1871-72

Read at the Annual Meeting, May 7th, 1872

LEEDS
PRINTED BY McCORQUODALE & CO., BANK STREET

MDCCCLXXII

IMPORTANT RULE

RESPECTING THE PROPERTY OF THE SOCIETY

PASSED OCTOBER 8TH, 1860

That in the event of a dissolution of this Society, its Property and Effects, whether real or personal, shall not be disposed of for the personal benefit of the Members, but shall be appropriated in such manner for the advancement of Science, Literature, or Art, in the town of Leeds, as shall be determined by a majority of the Members at an extraordinary Meeting to be convened for that purpose. But that no dissolution of the Society shall take place without the consent, in writing, of a majority holding not less than two-thirds of the Proprietary Shares.

FORM OF A BEQUEST TO THE SOCIETY

Every person desirous of bequeathing to the Society any Sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form:—

I give and bequeath to the Trustees for the time being of the Society established at Leeds, called "THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY," *for the use of the said Society, the sum of , to be paid out of such part of my personal Estate as I may legally charge therewith.* [Or here enumerate the Effects or Property intended to be bequeathed]. *And I direct that the Receipt of the Treasurer of the said Society for the time being, shall be an effectual discharge to my Executors for the said Legacy.*

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

FIFTY-SECOND SESSION

In reviewing once more the position and prospects of the Society, the Council have the satisfaction of reporting that its numerical strength is maintained.

A considerable accession of Members and Subscribers occurred about five years since, when a total of 646 was reached. Fluctuations of varying degree have happened annually since that period, as might have been anticipated. The following is the strength of the Society's roll of names at the present time—Proprietary and Ordinary Members, 239; Subscribers, 461; total, 700.

At the commencement of this Session, the amount of the annual subscription of the class hitherto known as Five Shilling Subscribers was altered to Seven Shillings and Sixpence. As this class had become numerous, the adjustment of its rate of subscription to one bearing a more equitable comparison with the payments of members and ordinary subscribers was evidently an important question for the interests of the Society. It was with much satisfaction that the Council found the alteration cheerfully accepted by those concerned. This class of subscribers now numbers 204, as compared with 236 a year since, their total payments being £76 10*s.* instead of £59.

Another change which came into operation at the beginning of the Session was the enforcement of a regulation requiring every member or subscriber to produce a ticket upon each attendance at a lecture. For the general disposition to comply with this necessary regulation the Council beg to thank the members and subscribers, and to state that their arrangements for exceptional cases of default have been made so as to avoid giving unnecessary inconvenience. In this matter, the force of habit which formed the chief difficulty in making the change will now have been enlisted on the side of the new regulation.

The Council have much pleasure in acknowledging a further donation of £10 from T. Emsley, Esq., of Burley-in-Wharfedale, and also of £10, being the price of an extra Share previously held by him, from John Rhodes, Esq.

The following is a list of the Papers that have been read during the past Session :—

1. "On the Present State of the Question of Spontaneous Generation." By the President, J. D. Heaton, M.D., F.R.C.P. Read Oct. 18th, 1871.

2. "On the Moabite Stone." By the Rev. C. D. Ginsburg, LL.D. Read Nov. 7th, 1871.

3. "On Economic Studies on London." By Professor Leone Levi, F.S.A., F.S.S., Doctor of Political Economy, &c. Read Nov. 21st, 1871.

4. "On the Physical Constitution of Comets," with illustrations. By Professor Osborne Reynolds, M.A., Fellow of Queen's College, Cambridge. Read Dec. 5th, 1871.

5. "On the Growth of the English Constitution from the earliest times." By E. A. Freeman, M.A. Read Jan. 9th, 1872.

6. Second Lecture upon the same subject. Read Jan. 16th, 1872.

7. "On Recent Speculations respecting the Climatal History of the Earth." By W. Pengelly, F.R.S., F.G.S. Read Jan. 23rd, 1872.

8. The Conversazione. Held Feb. 1st, 1872.

9. "On the Physical Conditions and Animal Life of the Deep Sea." By W. B. Carpenter, M.D., V.P.R.S., President-elect of the British Association. Read Feb. 6th, 1872.

10. Second Lecture upon the same subject. Read Feb. 9th, 1872.

11. "Electricity and War." With illustrations and experiments. By Nathaniel J. Holmes. Read Feb. 20th, 1872.

12. Second Lecture upon the same subject. Read Feb. 22nd, 1872.

13. "On the Physical Features of Iceland, the Manners and Customs of the Icelanders," &c. By Jón A. Hjaltalin. Read March 5th, 1872.

14. "On Geographical Botany, with Special Reference to the Origin and Distribution of the British Flora." By the Rev. G. Henslow, M.A., F.L.S., Lecturer on Botany at St. Bartholomew's Hospital, London. Read March 19th, 1872.

15. "On Great Whales." By William Turner, M.B., Professor of Anatomy in the University of Edinburgh. Read April 2nd, 1872.

16. On the Geology of Leeds and the Neighbourhood." By L. C. Miall. Read April 9th, 1872.

The Courses of Educational Lectures provided during the preceding sessions have been continued during the winter. Before Christmas, ten lectures on "The Distribution of Plants and Animals," were delivered by Mr. L. C. Miall; and, after Christmas, eight lectures on "Zoology," dealing more particularly with the Mammalia, were given by Mr. Edward Atkinson, F.L.S., F.Z.S.

The Annual Conversazione, which had been announced for December 19th, was postponed to February 1st, in consequence of the illness of H.R.H. the Prince of Wales. An unusually large number of members, subscribers and their friends was present. The principal features of the Conversazione were the large and interesting collection of pictures, photographs, and botanical diagrams, contributed from the collections at South Kensington, by the Science and Art Department; the extensive series of metal work,

carvings in wood and ivory, &c., lent by the Indian Museum; and the antiquities, Egyptian sketches, and works of art, contributed by Alfred Harris, Esq., jun., of Kirby Lonsdale.

The re-arrangement of some sections of the Society's valuable Museum is now proceeding. During the past year, the curator, Mr. L. C. Miall, has given a large amount of attention to the collections of British birds and minerals. Both these series have been cleaned, arranged, and more fully named. The labels attached to the specimens are all printed, and in part descriptive. When similar cards have been supplied to all the objects exhibited in the Society's Museum, it is believed that a considerable gain in clearness and instructiveness will have been effected. The work of printing these labels has been performed by the Curator's assistant by means of a small printing-press upon the premises. Although the large number of labels required has occupied the greater part of the assistant's time whilst the re-arrangement has been in hand, the Society has acquired a valuable result without any appreciable addition to its expenses. In the new classification of the mineral collection, the Curator has embraced an opportunity for making the series more thoroughly illustrative of Mineralogy as a science. By the introduction of a series of elementary bodies, by models representing crystallographic methods, and by illustrations of the physical qualities of substances as used by the mineralogist for their differentiation, the visitor to this department is led up to the science of the subject, and, as far as possible, a clue is given him which will serve as a guide to his intelligent inspection of the mineral collection. Convinced of the desirability of thus making the Society's Museum as easy to be read by the student as the pages of an open book, the Council have, by one of their last acts, decided upon printing a Guide to

the mineral collection, in order to supplement the necessarily brief descriptions given upon the labels. This Guide is ready for the press, and will be sold at the price of one penny. Should its reception by visitors to the Museum justify such a course, other departments of the collections will claim similar elucidation, and when completed, the whole of these descriptive accounts may be bound together. In this way, it is hoped that a desideratum long recognised by the Society will be attained by the production of an inexpensive General Guide to the Museum.

In connection with the continued development of the Society's Museum as an important educational agency, the Council believe that their successors will be stimulated by a steadily increasing demand for these aids to science-teaching. One influence which appears likely to promote such tendencies is the recent opening of the Public Free Library, by which a large collection of books upon all departments of science has been thrown open to every one, the permanence of the system being ensured by its support from the municipal funds. The Council recollect with satisfaction that their former colleague and president, the present Bishop of Hereford, (then Canon Atlay, Vicar of Leeds), gave his most hearty and effective support to the proposal to establish this library.

The total number of persons admitted by payment to the Museum during the past year is 42,221, a considerable increase upon the two preceding years. With the exception of 1868-9, when the Art Exhibition brought great numbers of visitors to the town, no previous year has equalled the receipts from this source in 1871-2.

A summary of the meteorological observations taken during the year 1871 is appended.

In their last Report, the Council brought before the members and subscribers the claims of a fund then being

raised for the benefit of the widow and younger children of the Society's late valued Curator, Mr. Henry Denny. The general response to this appeal showed the estimation in which Mr. Denny was held, and the fund reached £883 7*s.* 6*d.* The sum of £37 10*s.* 1*d.* was handed to Mrs. Denny, and £837 7*s.* 6*d.* has been invested in the names of the following trustees, viz., J. D. Heaton, Esq., M.D., J. E. Eddison, Esq., M.D., and T. W. Stansfeld, Esq.; the direction of the principal sum, and also of the interest produced, being vested in the Council for the time being, subject to the objects for which the fund was raised. The interest upon the invested amount is now being paid to Mrs. Denny at half-yearly periods.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1871.

1871.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January	33·6 Fah.	29·729	0·655
February	42·3 ,,	29·766	1·090
March	48·2 ,,	29·832	0·430
April	46·6 ,,	29·429	3·150
May	53·6 ,,	29·938	1·000
June	54·5 ,,	29·795	4·084
July	60·9 ,,	29·623	3·217
August	64·8 ,,	29·767	0·993
September	54·9 ,,	29·757	5·570
October	50·4 ,,	29·763	2·954
November	39·1 ,,	29·742	0·750
December	40·2 ,,	29·873	1·214

The mean monthly temperature was 49·1°.

The mean monthly height of the barometer was 29·751 inches.

The total rainfall for the year was 25·107 inches.

The greatest degree of heat, as indicated by the thermometer in the sun, was 106° on the 13th August; the greatest in the shade was 89° on the 10th August; and minimum 11° on 1st January.

The greatest barometric pressure was on the 30th May, being 30·521 inches, the temperature of the mercury being 69°; the least pressure was on 16th January, being 28·550 inches, temperature of mercury 49°.

The greatest fall of rain was on the 28th September, being 1·731 inches.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the mean level of the sea, 137 feet; height of the rain gauge above the street, 46 feet.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY

STATEMENT OF RECEIPTS AND EXPENSES FOR THE YEAR 1871-72

RECEIPTS.

	£	s.	d.	£	s.	d.
To Curator's Balance	30	18	6½			
				30	18	6½
Subscriptions of—						
To New Proprietary Members, at 21*s.*	89	5	0			
,, New Ordinary Members, at 21*s.*	77	14	0			
,, Old Ordinary Members, at 42*s.*	31	10	0			
,, Old Annual Subscribers, at 21*s.*	190	1	0			
,, New Annual Subscribers, at 21*s.*	38	17	0			
,, Old Annual Subscribers, at 7*s.* 6*d.*	64	10	0			
,, New ditto at 7*s.* 6*d.*	12	0	0			
,, Arrears	1	1	0			
				504	18	0
,, Rents of Cellars	50	0	0			
,, ,, of Lecture Room	92	11	0			
				142	11	0
,, Receipts for the Museum	175	18	5			
,, ,, for the Conversazione	23	0	0			
,, ,, for Science Classes	19	18	0			
,, Sale of Catalogue	1	12	6			
,, Sundries	19	18	5½			
				240	7	4½
				918	14	11
,, Balance due to Bank				113	17	11
				£1,032	12	10

DISBURSEMENTS.

	£	s.	d.	£	s.	d.
By Balance due to Bank, 1870-71	34	11	0			
				34	11	0
,, Repairs	127	12	4½			
,, Taxes and Rates	2	16	9			
,, Insurance	13	15	0			
,, Coals	14	5	9			
,, Gas	17	17	6			
,, Cleaning the Hall	2	17	0			
				179	4	4½
,, Salaries—Curator's	250	0	0			
,, ,, Assistant Curator's	32	8	0			
,, ,, Porter's	54	10	0			
				336	18	0
,, Collections—Geological	6	9	10			
,, ,, Zoological	28	7	6½			
,, ,, Archæological	7	4	2			
,, ,, Industrial	1	13	11			
,, ,, Library	13	3	4½			
				56	18	10
,, Science Classes	22	1	0			
				22	1	0
,, Postages	16	14	1			
,, Printing and Advertising	45	14	7			
,, Lectures	142	14	6			
,, Conversazione	59	6	2			
,, Commission to Collector	12	18	6			
,, Bankers' Commission	3	5	0			
,, Sundries	26	11	5½			
				307	4	3½
,, Balance—Curator's	95	15	4			
				95	15	4
				£1,032	12	10

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY

1871–72

GEOLOGY AND MINERALOGY

A collection of Fossils and Minerals from the collection of the late A. Oxley, M.D., of Askerne, including—	Mr. T. Louis Oxley, Roundhay
Pecten sublævis, Lias	
Head of Ichthyosaurus, do.	
Ammonites Blagdeni, do.	
„ obtusus, do.	
„ heterophyllus, do.	
Nautilus, do.	
„ do.	
Belemnites tornatilis, do.	
Spine of Hybodus, do.	
Slab with Gryphæa, &c., Kelloway Rocks	
Ammonites giganteus, Oolite	
„ cavatus, Speeton Clay	
„ quadrifidus, do.	
Pecten cinctus, do.	
Alum shale and crystals, Whitby	
Bones of Ichthyosaurus and Plesiosaurus	
2 Molars of Elephas primigenius, Scarborough	
7 Specimens of Rock Crystal	
4 Corals	
3 Spongia radiciformis, Flamborough	
Lima rudis, Oolite	
2 Astacus rostratus	
Septaria	
Phasianella Haddingtonensis	
Kimmeridge Coal	
Zamites gigas, Gristhorpe	
Astropecten, Oolite	
2 Pleurotomaria anglica, Lias	
Terebratula trilineata, Oolite	
Pecten demissus, do.	
Spirifera pinguis, Mountain Limestone	
„ ovalis, do.	
„ trigonalis, do.	
Agates and Carnelians	
Lead and Zinc ores	

Pecten æquivalvis, Marlstone	Mr. Samuel Spure, Morley.
Various Carboniferous and Silurian fossils	Mr. L. C. Miall.
Elementary substances for the mineral collection, viz.:—oxygen, hydrogen, nitrogen, chlorine, bromine, carbon, sulphur, iodine, potassium, sodium, magnesium, zinc, cadmium, cobalt, nickel, tin, arsenic, antimony, bismuth, copper, and silver	Mr. R. Reynolds.
Larkin's Crystal Cube for shewing the axes of regular crystals	Mr. R. Reynolds.
Specimens of crude and manufactured Ozokerite, Tincal or Native Borax, Torbanite, and Kimmeridge Coal	Mr. R. Reynolds.
Sodium in exhausted tube	Herr Professor Weinhold, Gewerbeschule, Chemnitz.
Greensand fossils, from Cambridgeshire	Mr. George Smith, Ardsley.
Specimen of Apatite	Mr. J. T. Pearson.
Calamites Suckovii in Ironstone	Mr. T. Nunns, Carlton, near Wakefield.
Pholadomya and Cypricardia, from Oolite at Castleton	Mr. J. E. Lutz, Rawden.
2 cwt. of Brown Coal (Lignite)	Mr. H. M. Felkin, Chemnitz.

ZOOLOGY AND BOTANY

White rat (stuffed)	Mr. W. Sykes Ward.
Madreporaria muricata, with attached sponge	Dr. Heaton, President of the Society.
3 Skins and skeletons of Perigalea, 2 skins of Diabolus, 3 adult specimens of Perameles (skin and skeleton), 2 young of the same, 1 skin of the same	Mr. W. H. Gellibrand, Tasmania.
Red Deer, fresh specimen	Mr. R. Tennant, Scarcroft.
Gulf Weed (Fucus bacciferus), Australian Hawk (Astur), Stringy Bark	Mr. Edward Joy, Sydney.
Nest of Trap-door Spider, Jamaica	Miss Clark, Jamaica.
Skeleton of Bustard (Otis Tarda)	Dr. Heaton, President of the Society.
Crab-eating Dog (Thous cancrivorus), Guiana	Mr. John Lupton.
Parrot fish	Mr. F. Bainbridge, Harrogate.
2 Peregrine Falcons (N. America, young, and Scotland, adult), 3 Sparrow Hawks from Thirsk	Mr. A. Clapham, Scarborough.

Pupa and Imago of Dasychira pudibunda...	Dr. Heaton.
Aquarium, with two living specimens of the Axolotl (Sirenodon)	Mrs. Nunneley.
Case of Birds	Mrs. Nunneley.
Greater Long-eared Bat (Vespertilio auritus)	Mr. James Alexander, Ripon.
Dynastes, from Pernambuco	Mr. Joseph Croysdale, Leeds.

ARCHÆOLOGY AND ETHNOLOGY

Wooden Clapper used by Medicine Man of North America (Vancouver's Island) ...	Mr. Thomas Stephenson.
3 Shilling pieces of Charles I. (Tower Mint) found in removing a house in Meadow Lane	Mr. John Barran, Mayor of Leeds.
7 Casts in plaster of inscribed and sculptured rocks on Rombald's Moor, near Ilkley	Mr. John Holmes, Methley.
Further collection of Flint Implements, from Flamborough	Mr. J. J. Barugh, Bridlington.
Quern, found at Ickles, Rotherham (Roman Encampment)	Mr. Charles Rawson, Rotherham.
Quern	Mr. E. Filliter.
Further collection of Flint Implements and Chippings, from Adel.....	Mr. Twigg, Adel.

TECHNOLOGY

Diagram illustrating the manufacture of Glass	Mr. R. Reynolds.
Collection of Beetles, used for ornamental purposes by jewellers, artificial flower makers, milliners, &c.....	Purchased by the Society.
Slab of Lithographic Stone, as used by Printers	Mr. L. C. Miall.
Flowers of Jasminum officinale and Epidendrum, from Canton, used for scenting tea	Mr. R. Reynolds.
Indian Sun-hat, made of pith.....	Mr. J. T. da Cunha.

MISCELLANEOUS

Photographs and Maps of the Roundhay Park Estate.....	Mr. John Eddison, Agent to the Trustees of the late Mr. W. N. Nicholson.
60 Microscopic Slides	Mr. L. C. Miall.

Watch, the plates and movements of which are made of the plates of a boiler which burst at Bingley in 1869	Mr. Robert Coultish, Stanningley Foundry.
Old watch-key, in three joints	Mr. John Wilson, jun., Pudsey
Relics of the Chicago Fire. Nails fused together, and sheets of glass	Mr. Jas. B. Madder, Leeds.

PUBLICATIONS

Note on Dr. Hinrich Nitsche's Paper on "Some interesting Points concerning the mode of Reproduction of the Bryozoa," (Q.J.M.S.), by Rev. T. Hincks, B.A.	The Author.
Supplement to Catalogue of Zoophytes of South Devon and Cornwall (Ann. Nat. Hist.)	Do.
Smithsonian Contributions to Knowledge. Vol. XVII.	Smithsonian Institution, Washington.
Annual Report of the Board of Regents of the Smithsonian Institution, 1869	Smithsonian Institution, Washington.
Announcement of the Wagner Free Institute of Science, 1870-1	Wagner Free Institute of Science, Philadelphia.
To-day; a paper printed during the Fair of the Essex Institute, 1870	Essex Institute.
Appendix to Benjamin Anderson's Journey to Musardu, being *fac-simile* of Arabic letter from the King of Musardu to the President of Liberia, with translation by Rev. Edward W. Blyden. 1870	Rev. Edward W. Blyden.
Bulletin of Museum of Comparative Zoology at Harvard College, Cambridge, Mass., Vol. II., Nos. 1, 2, and 3. Report of do., 1870	Museum of Harvard College.
Boston Society of Natural History Memoirs Vol. II. pt. I. Proceedings, Vol. XIII., sheets 15-23	Boston Society of Natural History.
Congressional Directory for the 3rd Session of the 41st Congress of the United States of America	United States Government.
Annual Report of the Minnesota Historical Society for 1870 Collections of the Minnesota Historical Society. Vol. III., pt. I.	Minnesota Historical Society.
Bulletin of the Essex Institute, Vol. II. for 1870 Proceedings and Communications of the Essex Institute, 1868-71, Vol. VI., pt. II.	Essex Institute.

Proceedings of the American Philosophical Society, Vol. XI., Nos. 83-4-5, XII., 86-7 Transactions of the American Philosophical Society, Vol. XIV., N.S., pts. I., II., III	American Philosophical Society.
Transactions of the Glasgow Philosophical Society.....	Glasgow Philosophical Society.
Catalogue of Syriac Manuscripts, Part II.	Trustees of the British Museum.
Canadian Journal, 1871-2, XIII	Canadian Institute.
Greenwich Observations for 1869 and 1870	Lords of the Admiralty.
Patent Office Report, Washington, 4 vols. 1868.....	United States Patent Office.
Bidragtil Theorien forde ubestemte chemiske Forbindelser, af C. M. Guldberg ... Om Vœdeskers Udvidelse ved konstant Tryk, af C. M. Guldberg ..... Repräsentation der Imaginären der Plangeometrie, von M. S. Lie ..... Bidrag til den antike Philosophis Historie, af Dr. G. V. Lyng ..... Havets Temperatur mellem Island, Skotland og Norge, af H. Mohn ..... Om den kyrenaiske Skole, navnlig Annikeris og Theodoros, af Dr. G. V. Lyng Norsk Huus-Kalender, 1859 ..... Ertsforekomster i Sondhordland og paa Karmoen, af A. Helland..... Christiania Omegns ..... Phanerogamer og Bregner, af A. Blytt..... Skolevœsenets Ordning i Massachusetts, fremstillet af H. Nissen ..... Anaxagorasog Atomistiken, af M. J. Monrad ..... Nogle Strobemœrkninger om Bevidsthedens Vœsen, m. M. af C. Winter-Hjelm ..... Om Skuringsmœrker Glacial-formationen og Terrasser, samt om grundfjeldets og sparagmitfjeldets mœgtighedi Norge. I. Grundfjeldets. Af Prof. Theodor Kjerulf	Royal University of Norway, Christiania.
"The Gristhorpe Tumulus," by W. C. Williamson, F.R.S.	Mr. J. W. Teale, Scarborough.
The Industrial Progress of New South Wales, being a report of the Intercolonial Exhibition of 1870, at Sydney	Mr. Edward Joy, Sydney.
Abridgements of Specifications of Patents	The Commissioner of Patents.

Guide to Bronze Room Catalogue of Hemiptera Heteroptera, Pt. IV.	Trustees of the British Museum.
Reliquiæ Diluvianæ, by Rev. William Buckland	Mr. John Lupton.
Report of the British Association for the Advancement of Science, 1871.....	British Association.
Mineral Statistics for 1870 Geology of Carboniferous Rocks N. and E. of Leeds, and Permian and Triassic Rocks about Tadcaster	Director General of the Geological Survey.
Report on the best mode of obtaining an additional and purer supply of water for Leeds, by E. Filliter, C.E.	Author.
Physiology of the Soul and Instinct as distinguished from Materialism, by Martyn Paine Paine's Institutes of Medicine, 9th Edition	Harper and Brothers, New York.
Proceedings of the Zoological Society of London for 1871	Zoological Society of London.
Journal of the Chemical Society for 1871...	Chemical Society.
Quarterly Journal of the Geological Society for 1871	Geological Society.
Australasian, 1871-2, Vols. XI., XII.	The Publishers.
Reports and Papers of Architectural Societies for 1870	Associated Architectural Societies.
35th Annual Report of the Warwickshire Natural History and Archæological Society.....	Warwickshire Natural History and Archæological Society.
Journal of the Royal Historical and Archæological Association of Ireland, I., Pts. 7, 8, 9, 10	Royal Historical and Archæological Association of Ireland.
Quarterly Returns of Marriages, Births, and Deaths in England, 1871-2	Registrar General.
Transactions and Proceedings of the New Zealand Institute, 1870, III.....	New Zealand Institute.
Proceedings of the Liverpool Literary and Philosophical Society, 1868-9, XXIII., and 1869-70, XXIV.	Liverpool Literary and Philosophical Society.
Proceedings of the Glasgow Philosophical Society, 1870-1, VII., 3	Glasgow Philosophical Society.

Catalogue of Ruminant Mammalia, by J. E. Gray Guide to select Greek Coins	Trustees of the British Museum.
Programme of Examinations for 1872. Journal of the Society of Arts	Society of Arts.
Annual Report of the Philosophical and Literary Society of Hull, for 1871	Hull Philosophical and Literary Society.
The Leader, 1871–2.	The Publishers.
Illustrated Australian News, 1871–2.	The Publishers.
Oversigt over det Kongelige Danske Videnskabernes Selskabs, 1870	Fra del Kongelige Danski Kjobenhoven.
The Radcliffe Observations, 1868, Vol. XXVIII.	The Radcliffe Trustees.
Annual Report of the Yorkshire Philosophical Society for 1870	Yorkshire Philosophical Society.
Journal of the Anthropological Institute, Vol. I., 1871	Anthropological Institute.
Proceedings of the Literary and Philosophical Society of Manchester for the Session 1871-2	Literary and Philosophical Society of Manchester.
Philosophical Transactions of the Royal Society, CLXI., 1871 Proceedings of the Royal Society, 1871-2... Correspondence concerning the Great Melbourne Telescope, 1852-70.....	Royal Society.
Abstract of the Proceedings of the Liverpool Geological Society, 1870-1.....	Liverpool Geological Society.
Proceedings of the Royal Institution, Vol. VI.	Royal Institution of Great Britain and Ireland.
Royal Astronomical Society: Monthly Notices, 1871-2 Memoirs, XXXIX, 1 A General Index of the first 38 volumes of the Memoirs	Royal Astronomical Society.
Yorkshire Archæological and Topographical Journal, pt. VI.....	Yorkshire Archæological and Topographical Association.
8th Annual Report of the Belfast Field Naturalists' Club, 1870-1	Belfast Field Naturalists' Club.
Report of Surgical Cases in the Army, United States, Circular No. 3	Surgeon General, Washington.
Journal of the Royal Dublin Society, Vol. V.	Royal Dublin Society.

Sanitary Report on Leeds, 1871	Dr. Robinson.
Proceedings of the Geologists' Association, II., 4, 5. Annual Report of ditto, 1871	Geologists' Association.
Proceedings of the Liverpool Philomathic Society, XVI., 1870-1.....	Liverpool Philomathic Society.
Transactions of the Royal Society of Edinburgh, XXVI. Proceedings of ditto, 1870-1	Royal Society of Edinburgh.
Monthly Notices of the Royal Society of Tasmania, 1870	Royal Society of Tasmania.
29th Annual Report of the Royal Polytechnic Society of Cornwall, 1871.....	Royal Polytechnic Society of Cornwall.
Journal of the Royal Institution of Cornwall, with the 54th Annual Report, XIII., 1872	Royal Institution of Cornwall.
Edinburgh Astronomical Observations, XIII., 1860–70	Her Majesty's Government.
Transactions of the Historic Society of Lancashire and Cheshire, N.S., vols. IX., X., 1868–9, 1869–70	Historic Society of Lancashire and Cheshire.
Mittheilungen der geographischen Gesellschaft in Wien, XIV., 1871.....	Imperial Royal Geographical Society of Vienna.
Proceedings of the Academy of Natural Sciences of Philadelphia, 1870.....	Academy of Natural Sciences of Philadelphia.
Journal of Anthropology, I.	Anthropological Society.

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1[illegible]

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Thomas Tennant	21, Blenheim Terrace.
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William Wailes	Harrogate.
William Watson	Elmwood, Harrogate.
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John Wilson	Seacroft, near Leeds.
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George Corson	Far Headingley, near Leeds.
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T. G. Denny	46, Burley Street.
J. W. Dixon	13, Vernon Road.

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John Hepper	Clareville, Headingley, near Leeds.
Henry Percy Holt	Cavendish Road.
Joseph Holt	Wedderburn House, Harrogate.
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Edward Harry Woods, Rosario, in the Argentine Republic.

Thomas Wright, M.A., F.S.A., M.R.S.L., Member of the Institute of France; Corresponding Member of the Society of Antiquaries of Copenhagen; of the Society of Antiquaries of Scotland, &c., &c.; Brompton.

McCorquodale & Co., Printers, Bank Street, Leeds.

LEEDS

PHILOSOPHICAL AND LITERARY SOCIETY

THE ANNUAL REPORT

For 1872-73.

THE

FIFTY-THIRD REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL & LITERARY

SOCIETY

AT THE

CLOSE OF THE SESSION 1872-73

Read at the Annual Meeting, May 6th, 1873

LEEDS
PRINTED BY McCORQUODALE & CO., BANK STREET
MDCCCLXXIII

IMPORTANT RULE

RESPECTING THE PROPERTY OF THE SOCIETY

PASSED OCTOBER 8TH, 1860

That in the event of a dissolution of this Society, its Property and Effects, whether real or personal, shall not be disposed of for the personal benefit of the Members, but shall be appropriated in such manner for the advancement of Science, Literature, or Art, in the town of Leeds, as shall be determined by a majority of the Members at an extraordinary Meeting to be convened for that purpose. But that no dissolution of the Society shall take place without the consent, in writing, of a majority holding not less than two-thirds of the Proprietary Shares.

FORM OF A BEQUEST TO THE SOCIETY

Every person desirous of bequeathing to the Society any sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form :—

I give and bequeath to the Trustees for the time being of the Society established at Leeds, called "THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY," *for the use of the said Society, the sum of , to be paid out of such part of my personal Estate as I may legally charge therewith.* [Or here enumerate the Effects or Property intended to be bequeathed]. *And I direct that the Receipt of the Treasurer of the said Society for the time being, shall be an effectual discharge to my Executors for the said Legacy.*

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

FIFTY-THIRD SESSION

THE Council have the satisfaction of reporting that a small increase has taken place in the class of Subscribers to the society. Seventy-four new names have been elected during the past year, whilst the total loss from death, removal, and resignation has been sixty-four.

By the renewed liberality of Thomas Emsley, Esq., of Burley-in-Wharfedale, another donation of £10 has been placed at the society's disposal.

The ordinary income of the society is only adequate to its current expenditure, and the extension of the various parts of the Museum is dependent upon donations either of money or specimens. Those who may generously place such means at the disposal of the Council, may rely upon their effective application towards this important object.

The following is a list of the Lectures delivered before the society during the past Session :—

1. "Literary Life at the beginning of the Eighteenth Century." The President, Rev. Canon Woodford, D.D. *Read Oct. 22nd*, 1872.
2. "Hill and Valley Sculpture." Archibald Geikie, LL.D., F.R.S., Professor of Geology in the University of Edinburgh. *Read Nov. 5th*, 1872.
3. Second Lecture. Professor Archibald Geikie. *Read Nov. 7th*, 1872.
4. The Conversazione. *Held Nov. 19th*, 1872.
5. "The Meteorology of the Sun in connection with that of the Earth." Balfour Stewart, LL.D., F.R.S., Professor of Natural Philosophy at Owens College, Manchester. *Read Dec. 3rd*, 1872.
6. "Radiant Light and Heat." Professor Balfour Stewart. *Read Dec. 10th*, 1872.

7. "The two Pitts." J. R. Seeley, M.A., Professor of Modern History in the University of Cambridge. *Read Dec. 17th*, 1872.
8. "Mental Dietetics." J. Crichton Browne, M.D. *Read Jan. 7th*, 1873.
9. "The Sense of Hearing." Michael Foster, M.D., F.R.S., Professor of Physiology in the University of Cambridge. *Read Jan. 21st*, 1873.
10. "The Christian Catacombs of Rome." The Very Rev. A. P. Stanley, D.D., Dean of Westminster. *Read Jan. 29th*, 1873.
11. "The Primitive Social Condition of Man." E. B. Tylor, F.R.S. *Read Feb. 4th*, 1873.
12. "The History of Printing," with Illustrations of early printed books. Rev. John Gott, M.A. *Read Feb. 11th*, 1873.
13. "Shakspeare—an attempt to place in order of merit the four greatest plays." Rev. M. W. Mayow, M.A. *Read Feb. 18th*, 1873.
14. "The Exploration of Moab." Rev. Canon Tristram, LL.D., F.R.S. *Read Mar. 4th*, 1873.
15. "On some new Phenomena associated with Magnetism." W. F. Barrett, F.C.S. *Read Mar. 18th*, 1873.
16. "Art, in its relations to Civilisation, Wealth, National Progress, and Morality." George Redford, F.R.C.S. *Read April 1st*, 1873.

On the afternoons of January 14th and 16th respectively, Mr. L. C. Miall delivered two juvenile Christmas lectures, on the following subjects: "The Noah's Ark," being a description of the toy so named; and "The Humming Top."

The Educational Lectures established in previous years have been succeeded during this session by a course of eight lectures on Animal Physiology, by Dr. J. E. Eddison. An average attendance of about sixty persons gave evidence of the appreciation of definite instruction in scientific subjects. Much careful attention was given to demonstration, by means of dissections, microscopic preparations, &c.

The annual conversazione was held on November 19th. The special feature of the evening's entertainment was Mr. Tegetmeier's lecture on the "Homing or Carrier Pigeon," illustrated by numerous prize birds of different breeds, apparatus of various kinds used in the training of pigeons, and

lime-light enlargements of collodion messages sent into Paris during the recent siege. Of the other objects provided for exhibition during the evening, a large number were intended to illustrate the two practical arts of printing and telegraphy. Through the kindness of Mr. E. J. Smith, Postmaster for Leeds, seven different kinds of telegraphic instruments were shown in operation, and by the help of frequent explanation from assistants, a clear idea of the process of transmitting messages and printing them automatically could be obtained. In another room were exhibited printing-presses of various constructions, lithographic presses, a paging machine, stamping machines, and other working typographic and lithographic machinery. The principle of selecting certain subjects to receive special attention on these occasions may perhaps be usefully adopted in the future. The collections displayed in the Library comprised a number of rare and interesting examples of early printed books and manuscripts, lent by the Rev. John Gott, of Bramley; a valuable series of gold coins, contributed by Mr. Arthur Briggs, of Rawden; and a large number of autographs, exhibited by Mr. John Darlington and the Rev. H. F. St. John. The remainder of the available space was occupied by pictures and miscellaneous objects of interest.

Much progress has been made in the rearrangement of the Museum. In their last annual report, the Council stated that the departments of British Birds and Minerals had been put into satisfactory order. During the past year, the curator, Mr. L. C. Miall, has given close attention to the larger task of rearranging the comprehensive and valuable collection of Fossils. The whole of these have been carefully gone over, more fully named (printed labels being, to a great extent, substituted for the written ones), and mounted upon tablets of wood or pasteboard, coloured in such a way

as to indicate the zoological position of the specimens. The series of Carboniferous Fossils has, for the first time, received names. The collection of Cave Remains has been mounted and named, Mr. W. Boyd Dawkins having kindly given advice upon the subjects. Mr. Miall has prepared a series of about fifty descriptive notices, elucidating special points in relation to fossils, and for valuable aid towards this undertaking, the Council wish to record their thanks to Mr. William Pengelly, F.R.S., Mr. W. Boyd Dawkins, F.R.S., and Mr. H. B. Brady, F.L.S. These descriptions have been printed upon cards, and introduced at appropriate places in the collection of fossils. They have also served to form an important part of a Descriptive Guide to the Fossil Collection, which has been prepared by Mr. Miall. This Guide is just ready for issue at the price of 1*d.* per copy. The Council trust that it may meet with as favourable a reception as the guide to the mineral collection published a year since, of which 650 copies have been sold. The curator's attention is now being given to the invertebrate collection. The models of Foraminifera have been rearranged, and new printed labels substituted. The series of Protozoa, Cœlenterata, and Crustacea are now ready. For the illustration of details which cannot be indicated by the natural specimens, about twenty-five mounted drawings have been introduced into the cases.

The admissions to the Museum by payment have been 44,467, the largest number on record. In 1871-2 the number was 42,221.

One of the most important events in its bearing upon the local interests of science, has been the introduction of a scheme for establishing a Yorkshire College of Science. Towards this proposal the Council could only feel the greatest cordiality, and they recorded this feeling in the following resolution :—" That the Council have heard

with much satisfaction of the proposal for the formation of a Yorkshire College of Science, regarding it as an object of great public importance and utility, in which they hope to co-operate by such means as may be within their power."

By the kindness of a member of the society the Council is enabled to offer a prize of £5 in books or instruments for the best practical work in natural history or geology. Competitors must be not more than 21 years of age, and be members either of this society, of the Denny Club, or of the Leeds Field Naturalists' Club. A prospectus of the subjects, from which selection may be made, has been printed.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year, 1872.

1872.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January	40·8 Fah.	29·374	3·405
February	43·9 ,,	29·609	2·350
March	44·5 ,,	29·605	2·288
April	47·8 ,,	29·740	3·330
May	50·9 ,,	29·734	1·274
June	59·2 ,,	29·685	4·562
July	66·7 ,,	29·755	5·585
August	61·4 ,,	29·808	2·229
September	56·4 ,,	29·599	4·077
October	47·5 ,,	29·502	4·225
November	44·6 ,,	29·497	4·148
December	41·0 ,,	29·376	3·178

The mean monthly temperature was 50·4°.

The mean monthly height of the barometer was 29·607 inches.

The total rainfall for the year was 40·651 inches.

The greatest degree of heat, as indicated by the thermometer in the sun, was 106° on July 4, 21, and 22, and on August 18; the greatest in the shade was 93° on July 22; and minimum 25° on March 26.

The greatest barometric pressure was on the 6th April, being 30·376 inches, the temperature of the mercury being 56°; the least pressure was on January 24, being 28·268 inches, the temperature of the mercury being 52°.

The greatest fall of rain was on July 12, being 1·47 inches.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the mean level of the sea, 137 feet; height of the rain gauge above the street, 46 feet.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY

STATEMENT OF RECEIPTS AND EXPENSES FOR THE YEAR 1872-3

RECEIPTS.	£	s.	d.	£	s.	d.
To Curator's Balance	95	15	4			
				95	15	4
Subscriptions of -						
To New Proprietary Members, at 21s. ...	86	2	0			
,, New Ordinary Members, at 21s. ...	77	14	0			
,, Old Ordinary Members, at 42s. ...	31	10	0			
,, Old Annual Subscribers, at 21s. ...	202	13	0			
,, New Annual Subscribers, at 21s. ...	40	19	0			
,, Old Annual Subscribers, at 5s. ...	63	0	0			
,, New Annual Subscribers, at 5s. ...	13	2	0			
				515	0	0
,, Rent of Cellars	50	0	0			
,, Rents of Lecture Room	101	19	0			
				151	19	0
,, Receipts for the Museum	185	5	7			
,, Receipts for the Conversazione ...	13	5	0			
				198	10	7
,, Receipts for Science Classes	11	10	0			
				11	10	0
,, Sale of Descriptive Guides	3	1	4			
				3	1	4
				975	17	3
,, Balance due to Bank				145	18	4
				£1,121	15	7

DISBURSEMENTS.	£	s.	d.	£	s.	d.
By Balance due to Bank, July 1st, 1872	111	17	11			
				111	17	11
,, Repairs	47	10	3½			
,, Taxes and Rates	3	10	8			
,, Insurance	11	18	0			
,, Coals	31	14	0			
,, Gas	18	13	4			
,, Cleaning the Hall	0	14	0			
				103	0	3½
,, Salaries Curator's	250	0	0			
,, ,, Assistant Curator's	17	0	0			
,, ,, Porter's	64	19	0			
				331	19	0
,, Collections Geological	13	10	0			
,, ,, Zoological	46	0	0			
,, ,, Archæological	4	10	0			
,, ,, Library	24	10	4			
				80	7	4
,, Science Classes	10	4	4			
				10	4	4
,, Postages	31	10	5			
,, Printing and Advertising	110	1	4			
,, Lectures	138	4	11			
,, Conversazione	57	13	0			
,, Commission to Collector	11	12	0			
,, Bankers' Commission	9	12	0			
,, Sundries	45	6	7			
				384	18	1
				1,051	11	8½
,, Balance Curator's	70	4	1½			
				70	4	1½
				£1,121	15	7

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY

1872–3

GEOLOGY AND MINERALOGY

Slab of Shale containing Unios	Mr. Thomas Greenwood, Beeston
Specimens of Pebbles and contained Fossils, from the Conglomerate of Budleigh Salterton	Mr. Edward Atkinson, F.L.S.
Slide of Polycystina, from Tertiary Deposits, Barbadoes	Mr. H. B. Brady, F.L.S., Newcastle-on-Tyne.
9 Specimens of Diplopterus and other Devonian Fishes 44 Specimens of Ananchytes and Micraster, from the Drift of Norfolk Casts of Belemnites, Terebratula, and Ventriculites in Chalk Flints Goniatites reticulatus, from Yoredale Rocks, Hebden Bridge	Mr. A. W. Morant, Borough Engineer
Flints containing Microscopic Fossils Specimens of Orthoceras and Posidonomya Becheri, Goldf. from Millstone Grit (Cayton Gill Beds), near Markington ...	Rev. J. S. Tute, B.A.
Rock Specimens, Minerals, and Fossils, from Crummack and Austwick	Prof. T. McK. Hughes, M.A.
Eozoönal Serpentine, from Connemara, Ireland Eozoön Canadense, Petite Nation, Nova Scotia	Mr. H. B. Brady, F.L.S.
Tusk of Mammoth (Elephas primigenius), dredged off the Yorkshire coast, 1826 ...	Purchased.
Pholidophorus Bechei, Lyme Regis	Purchased.
Specimens of Trinidad Asphalt, containing recent and fossil shells	Mr. J. A. Hirst.

Specimen of Palladium	Mr. W. Sykes Ward, F.C.S.
Mass of Hematite, Specular Iron, and Rock Crystal	Mr. John Holmes.
Piece of Volcanic Scoria	Mr. Buchan.
A Rough Diamond in the matrix, from the Cape of Good Hope	Mr. W. Hartley, Port Natal.
A collection of Precious Stones, including— Topaz (2 rough, 2 cut) Cat's Eye Turquoise (3 specimens) Diamond Moonstone Spinel Ruby Jargoon Amethyst (2 specimens) Heliotrope Precious Opal (2 specimens) Lapis Lazuli Garnet (3 specimens) Sapphire White Sapphire Red Carnelian White Carnelian Mocha Stone Ruby (4 specimens) Pink Topaz Emerald (1 rough, 1 cut) Malachite (2 specimens)	Dr. O'Callaghan, LL.D., D.C.L., Leamington.
Five specimens of Specular Iron (Hematite), from Gellivara, Sweden	Col. Gascoigne.

ZOOLOGY AND BOTANY

Pair of Marmozets	Mr. Boswell.
Distorted Fowl's Egg	Mr. Jowitt, Shipley.
Slide of Nummulina planulata, Lamk. Fiji	Mr. H. B. Brady, F.L.S., Newcastle-on-Tyne.
Specimen of Green Monkey	Mr. Thomas Clapham.
One large Bahama Sponge and 5 Smyrna Sponges (4 on rock)	Messrs. H. Marks & Sons. through Mr. F. Reynolds,
Snake-eater, or Goa Samp	Mr. H. Beverley, M.A., H.M. Bengal Civil Service.
Living Specimens of Alcyonella fungosa, Fresh-water Polyzoon	Mr. J. Abbot.
Cranium of Beaver, from Wawne	Purchased.

Skull and Horns of Red Deer, from Holderness	Purchased.

ARCHÆOLOGY AND ETHNOLOGY

Engine for cutting the teeth of watch wheels (16th century)	Exec. of late Richd. Westerman.
Old Padlock	Mr. Thomas Greenwood, Beeston.
Slab of Marble, inlaid with Arabesque pattern in coloured cement, from Damascus	Mrs. Marshall, late of Bond Street, Leeds.
Rubbings from 96 Monumental Brasses	Mr. A. W. Morant, Borough Engineer.
Knotted Strings, by which the Census was taken in the Southal country (Report of Census, p. 35)	Mr. H. Beverley, M.A., H.M. Bengal Civil Service.
Esquimaux Weapon, shaped out of a Walrus Tusk	Purchased.
Bronze Celt	Purchased.
Stone Hammer Head, from Sheriff Hutton	Purchased.

TECHNOLOGY

Maple Sugar (sample)	Mr. H. B. Brady, F.L.S., Newcastle-on-Tyne.
Collection of Foreign Woods, each specimen cut or turned in five different ways, so as to shew its appearance and capabilities	Mr. W. Sykes Ward, F.C.S.
Specimens of Stick Lac	Mr. J. A. Hirst.
Piece of Asbestos Cloth	Purchased.

PUBLICATIONS

Grave Mounds and their Contents, by Llewellyn Jewitt	Mr. John Holmes.
Project of an Instrument for the Identification of Persons, by Joseph Bonomi	The Author.
Dr. Adam Clarke's Account of all the English Translations of the Greek and Roman Classics A Sketch of the History of Leeds from Prehistoric Times to A.D. 1872, by John Holmes, Esq.	Mr. John Holmes.

Catalogue of the Willett Collection of Fossils in the Brighton Museum Papers relating to the Sub-Wealden Exploration	Mr. E. H. Willett, Brighton.
Notice of the Discovery of Remains of the Elk in Berwickshire, by John Alexander Smith, M.D. (From Proceedings of Society of Antiquaries, IX., 1870-1)	The Author.
Reliquiæ Aquitanicæ, Part XI.	Exec. of the late Henry Christy, Esq.
Report of the Census of Bengal, 1872	Mr. H. Beverley, M.A., H.M. Bengal Civil Service.
Thackrah's Introductory Discourse delivered to the Leeds Philosophical and Literary Society, April 6, 1821.....	Mr. Edward Atkinson, F.L.S.
Photographs and a Printed Notice of a Skeleton of Apteryx Australis	Mr. T. Allis, York.
Actstukker vedkommende de ved Universitetet anordnede Lærereramina Cantate Mindefest for Hans Majestæt Kong Carl den 19 de November, 1872 Trondhjems Stifts geologi, af Th. Kjerulf De Romanske Sprog og Folk Om den Gruppe af Substitutioner der tilhorer Ligningen for Division af Perioderne ved de elliptiske Funktioner, af L. Sylow Ny Interpolationsmethode, af J. J. Astrand Om Ligningen af 3die Grad, af Dr. A. S. Guldberg Ueber eine Classe geometrischer Transformationen, von Sophus Lie Over en Classe geometriske Transformationer, af Sophus Lie Hardangerfjordens Fauna. I. Crustacea, af G. O. Sars Bidrag til Legemernes Molekylartheori, af C. M. Guldberg Meddelelser fra Universitetets kemiske Laboratorium, ved P. Waage Om Lavoisier og den Franske Chemi, af Th. Hiortdahl Forekomster af Kise i Visse Skifere i Norge, af A. Helland.....	Royal University of Norway, Christiania.

Results of five years' Meteorological observations at Hobart Town, together with the results of twenty-five years' observations previously published, by F. Abbott, F.R.A.S.	Royal Society of Tasmania.
Smith's British Diatomaceæ Pritchard's Infusoria	Purchased.
Catalogue of the Library of the the Zoological Society, 1872 Revised List of Vertebrated Animals in the Zoological Gardens, 1872	The Zoological Society.
Geological Survey of Montana and the adjacent Territory, 1871.....	The Directors of the U.S. Geol. Survey.
Ye Abbott o' Canterburie, a merry storie...	Mr. S. L. Nussey.
Murchison's Siluria Jukes and Geikie's Manual of Geology ...	Purchased.
Catalogue of Hemiptera Heteroptera, Parts V, VI, VII. Appendix to Catalogue of Shield Reptiles, I. Hand List of Shield Reptiles Catalogue of Syriac MSS., III.	Trustees of the British Museum.
3 Copies of tri-daily Weather Bulletins and Weather Maps for the benefit of Commerce and Agriculture, issued by U.S. War Department.....	Mr. A. J. Myer, Brigadier General and Chief Signal Officer, U.S. Army.
A Synopsis of British Mosses, by C. P. Hobkirk	
Life of Count Rumford Works of Count Rumford, Vol. I.....	American Academy of Arts and Sciences.
2nd, 3rd, and 4th Annual Reports of Indiana Geological Survey	Mr. E. T. Cox, State Geologist, Indiana, U.S.A.
Special Report on Immigration, 1872 (2 copies).....	E. Young, M.D., Chief of U.S. Bureau of Statistics.
Monthly Reports of the U.S. Department of Agriculture for 1871 Report of the U.S. Commissioner of Agriculture for 1870	U.S. Department of Agriculture.
Geology of Neighbourhood of Kirby Lonsdale and Kendal.....	Director General of the Geological Survey.
Microscopical Journal, Vol. I., O. S., to Vol. III., N. S.	Purchased.

Journal of the Society of Arts, from July 5 to Dec. 27, 1872 Programme of Examinations for 1873	Society of Arts.
Proceedings and Communications of the Essex Institute, vol. VI, pt. III, 1868-71	Essex Institute.

PERIODICALS

WEEKLY

Nature	Purchased.
Leader (Australian Newspaper).....	Publishers.
Australasian.....	Publishers.

MONTHLY

American Journal of Science and Arts Annals and Magazine and Natural History Geological Magazine	Purchased.
Illustrated Australian News	Publishers of the "Leader."
Monthly Notices of the Proceedings of the Royal Society of Tasmania	Royal Society of Tasmania.
Journal of the Chemical Society	Chemical Society.
Bulletin of the Essex Institute	Essex Institute, U.S.A.
Monthly Notices of the Royal Astronomical Society.....	Royal Astronomical Society.

QUARTERLY

Quarterly Journal of Science Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society ...	Geological Society.
Quarterly Returns of Marriages, Births, and Deaths.....	Registrar General.
Journal of the Royal Historical and Archæological Association of Ireland	Royal Historical and Archæological Association of Ireland.
Journal of the Anthropological Institute ...	Anthropological Institute.

ANNUALLY

Philosophical Transactions	Purchased.
Proceedings of the Geologists' Association	Geologists' Association.
Mineral Statistics of the United Kingdom..	Director General of the Geological Survey.
Communications to the Yorkshire Philosophical Society	Yorkshire Philosophical Society.
Proceedings of the Glasgow Philosophical Society	Glasgow Philosophical Society.

Mittheilungen der kais. und königl. geographischen Gesellschaft in Wien	Royal Imperial Geographical Society of Vienna.
Proceedings of the Academy of Natural Sciences of Philadelphia.....	Academy of Natural Sciences of Philadelphia.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Proceedings of the Royal Society of Edinburgh Transactions of do.	Royal Society of Edinburgh.
Publications of the Ray Society.....	Purchased.
Abstract of the Proceedings of the Liverpool Geological Society	Liverpool Geological Society.
Transactions of the Edinburgh Geological Society	Edinburgh Geological Society.
Kongliga Svenska Vetenskaps Akademiens Handlingar ..... Do. do. Lefnadsteckningar Öfversigt af Kongliga Vetenskaps Akademiens Förhandlingar	Royal Swedish Academy of Sciences.
Natural History Transactions of Northumberland and Durham	Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne, and Tyneside Naturalists' Field Club.
Proceedings of the Berwickshire Naturalists' Club.....	Berwickshire Naturalists' Club.
Publications of the Palæontographical Society.....	Purchased.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger.....	Royal Danish Society of Sciences.
Proceedings of the Liverpool Literary and Philosophical Society	Liverpool Literary and Philosophical Society.
Proceedings of the Boston Society of Natural History Memoirs of do.	Boston Society of Natural History.
Transactions of the Historic Society of Lancashire and Cheshire	Historic Society of Lancashire and Cheshire.
Memoirs of the Royal Astronomical Society	Royal Astronomical Society.
Greenwich Observations.....	Lords of the Admiralty.
Transactions and Proceedings of the New Zealand Institute.....	New Zealand Institute.
Proceedings of the Warwickshire Naturalists' and Archæologists' Field Club	Warwickshire Naturalists' and Archæologists' Field Club.

Annual Report and Papers of the Associated Architectural Societies.....	Associated Architectural Societies.
Journal and Annual Report of the Royal Institution of Cornwall	Royal Institution of Cornwall.
British Association Report.....	British Association.
Annual Report of the Royal Cornwall Polytechnic Society.....	Royal Cornwall Polytechnic Society.
Annual Report of the Smithsonian Institution	Smithsonian Institution.
Annual Report of the Yorkshire Philosophical Society	Yorkshire Philosophical Society.
Annual Report of the Warwickshire Natural History and Archæological Society.....	Warwickshire Natural History and Archæological Society.
Annual Report of the U.S. Patent Office ...	United States Patent Office.
Annual Report of the Hull Literary and Philosophical Society	Hull Literary and Philosophical Society.
Annual Report of the Belfast Naturalists' Field Club	Belfast Naturalists' Field Club.
Annual Report of the Liverpool Free Public Library, Museum, and Schools	Free Library, Liverpool.
Annual Report of the Geologists' Association	Geologists' Association.
Annual Report on the Sanitary Condition of Leeds	Medical Officer of Health for Leeds.
Annual Report of the Minnesota Historical Society.....	Minnesota Historical Society.
Annual Report of the Museum of Comparative Zoology at Harvard College, U.S.A.	Museum of Harvard College, Cambridge, Mass.

Zeitschrift für Wissenschaftliche Zoologie (4 pts. a year)	Purchased.
Canadian Journal (3 or 4 pts. a year)	Canadian Institute, Toronto.
Yorkshire Archæological and Topographical Journal.....	Yorkshire Archæological and Topographical Association.
Proceedings of the Royal Society.....	Royal Society.
Smithsonian Miscellaneous Collections Do. Contributions to Knowledge...	Smithsonian Institution.
Proceedings of the Manchester Literary and Philosophical Society (about fortnightly, Oct. to April).....	Manchester Literary and Philosophical Society.

Journal of the Royal Dublin Society (about once a year).....	Royal Dublin Society.
Proceedings of the Royal Institution (2 pts. a year)	Royal Institution of Great Britain and Ireland.
Proceedings of the Zoological Society (3 pts. a year—May, Oct., March) Index to ditto (1861-70)	Zoological Society.
Journal of the Architectural, Archæological, and Historic Society of Chester.....	Architectural, Archæological, and Historic Society of Chester.
Edinburgh Astronomical Observations.....	Royal Observatory, Edinburgh.
Transactions of the American Philosophical Society Proceedings do. (several pts. a year)	American Philosophical Society.
Abridgements of Specifications of Patents, with Indices	Commissioner of Patents.

LIST OF OFFICERS AND COUNCIL,

1873-4.

OFFICERS

President	Rev. Canon Woodford, D.D.
Vice-Presidents	J. D. Heaton, M.D., F.R.C.P. J. I. Ikin, F.R.C.S.
Treasurer	Henry Oxley.
Honorary Secretaries	Thomas Wilson, M.A. Richard Reynolds, F.C.S.
Honorary Curator in Geology ...	J. G. Marshall, F.G.S.
Honorary Curators in Zoology ...	Edward Atkinson, F.L.S. T. Clifford Allbutt, M.D., F.L.S.
Honorary Curator in Ethnology and Archæology	J. E. Eddison, M.D.
Honorary Librarian	J. D. Heaton, M.D., F.R.C.P.

The above Officers, with the following Gentlemen, comprise

THE COUNCIL

Charles Chadwick, M.D., D.C.L., F.R.C.P.
Edward Filliter, C.E., F.G.S.
J. Rawlinson Ford.
Rev. John Gott, M.A.
Francis Martineau Lupton.
John Manning.
Rev. J. H. McCheane, M.A.
T. W. Stansfeld.
Rev. H. Temple, M.A.
W. Sykes Ward, F.C.S.

General Curator and Assistant Secretary, Louis C. Miall.

LIST OF MEMBERS AND SUBSCRIBERS,

1872-3.

* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

Aldam, W.	Frickley Hall, Doncaster.
Armitage, William James	Farnley, near Leeds.
Arthington, Robert	73, Hunslet Road.
Atkinson, John William	Woodhouse Square.
Baines, Edward, M.P.	St. Ann's Hill, Burley, near Leeds.
Barran, John	Chapel-Allerton Hall, near Leeds.
Battye, James C.	Yeadon, near Leeds.
*Beckett, William.	
Bilbrough, Alfred	15, Beech Grove Terrace.
Binks, Benjamin	Headingley, near Leeds.
Birchall, J. D.	Bowden Hall, Gloucester.
Broadhead, Henry	Chapel-Allerton, near Leeds.
Brown, James (2 shares)	Rossington, Doncaster.
Brown, Samuel James (2 shares)	Loftus Hill, near Knaresborough.
Burton, Miss	Roundhay, near Leeds.
Calverley, Edmund (2 shares)	Oulton Hall, near Leeds.
Charlesworth, C. H.	Settle.
Chorley, Henry	Park Square.
Coghlan, William	Granville House, Hyde Terrace.
Cudworth, John W.	52, Mount Preston.
Denison, William Beckett	Meanwood Park, near Leeds.
Dibb, Thomas Townend	Little Woodhouse.
Eddison, John Edwin, M.D.	29, Park Square.
Ellershaw, John	Oakfield, Kirkstall, near Leeds.
Ellershaw, Walter	3, Cromer Terrace.
Empson, Christopher	Bramhope Hall, near Leeds.
Ford, Robert Lawson	Adel Grange, near Leeds.
George, Thomas Willington	Chapeltown, near Leeds.
Goodman, Benjamin	Gledhow House, near Leeds.

Gott, Rev. John, M.A. (2 shares) .	Bramley Parsonage, near Leeds.
Gott, William Ewart (3 shares) .	Armley House, near Leeds.
Greenhow, Thomas Michael, M.D.	Newton Hall, near Leeds.
Harding, T. R.	St. Ann's Tower, Headingley.
Heaps, John William . . .	Terrace House, Chapeltown Road.
Heaps, Charles Denison . .	Woodhouse Lodge, Woodhouse Lane.
Heaton, John Deakin, M.D., F.R.C.P.	Claremont, Leeds.
Hey, William, F.R.C.S. . .	Gledhow Wood, near Leeds.
Hirst, Joseph	Wharfedale Lawn, Wetherby.
Holdforth, Walter	Knaresborough.
Holt, Joseph	Wedderburn House, Harrogate.
Horsfall, Abraham . . .	Whitkirk Manor House, near Leeds.
Ingham, Constantine . . .	Clarendon Place.
Ingham, William	Belmont, Chorley Lane.
Jowitt, John	Harehills Grove, Potternewton, near Leeds.
Joy, William Glover . . .	Headingley, near Leeds.
Kinnear, Thomas John, M.A. .	Horsforth Hall, near Leeds.
Latimer, John	St. Mark's Villas, Woodhouse Lane.
Luccock, John Darnton. . .	54, North Street.
Lupton, Francis	Beechwood, Roundhay, near Leeds.
Lupton, Sydney	Harehills, Potternewton, near Leeds.
Makins, Charles	17, Craven's Hill, Regent's Park, London, N.W.
Marshall, Edmond Henry . .	Weetwood Hall, near Leeds.
Marshall, Henry Cowper . .	. . Do.
Marshall, Arthur, F.G.S. . .	Headingley House, near Leeds.
Marshall, J. G., F.G.S. (2 shares) .	. Do.
Marshall, Victor Alexander Ernest, B.A.	Do.
Nunneley, J. A., M.B. . . .	22, Park Place.
*Rhodes, Rev. J. Armitage, M.A.	
Rhodes, John	Potternewton House, near Leeds.
Shepherd John	Allenby House, Tadcaster.
*Smith, John Metcalfe.	. . .
Smith, Henry Stooks . . .	Headingley, near Leeds.
Tatham, George	Springfield Mount.
Teale, Thomas Greenwood . .	Bentley House, Meanwood, near Leeds.
Teale, Mrs.	St. James' Lodge.

Tottie, John William	Coniston Hall, Bell Busk, nr. Skipton.
Waite, James Butler	Belvidere House, New Leeds.
Walker, Edward	15, Springfield Mount.
Ward, William Sykes, F.C.S.	Denison Hall, Hanover Square.
Whiteley, William	Butt's Cottage, Armley.
*Wilson, Richard Basset.	

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

Atkinson, Daniel Hopkin	16, Brunswick Place.
Atkinson, Edward, F.L.S., F.Z.S.	2, Albion Place.
Baines, Frederick	Weetwood.
Balme, E. B. Wheatley	Cote Wall, Mirfield.
*Beckett, William (8 shares).	
Bilbrough, Joseph Brooks	15, Beech Grove Terrace.
Birchall, Edward	7, Park Square.
Boothroyd, W.	Grove Hill, Headingley, near Leeds.
Brown, William (2 shares)	Bardon Grange, Weetwood, near Leeds.
Buckton, George	Roundhay, near Leeds.
Buckton, Joshua	Moor-Allerton, near Leeds.
Burkill, Isaac Henry	Allerton Hall, Chapeltown, near Leeds.
Butler, J. O.	Abbey House, Kirkstall, near Leeds.
Chadwick, Charles, M.D., D.C.L., F.R.C.P.	35, Park Square.
Chadwick, William	Arksey, Doncaster.
Cliff, Joseph	Wortley, near Leeds.
Connor, Mrs.	Gledhow Hall, near Leeds.
Conyers, W. H.	Oak Villa, Grosvenor Road, Headingley, near Leeds.
*Cooper, John (2 shares).	
Craven, Joseph	Clifton House, Beeston Hill, near Leeds.
Crofts, John	Adel, near Leeds.
Curwood, Capel Augustus	De Grey Terrace.
Donisthorpe, G. E.	Harrogate.
Fairbairn, Sir Andrew, M.A.	Goldsborough Hall, Knaresborough.
Farrer, James	Ingleborough House, Clapham, near Lancaster.

Ferguson, William . . .	25, Albion Street.
Filliter, Edward, M. Inst., C.E., F.G.S.	West Mount House, Clarendon Rd.
*Gott, John (10 shares).	
Hall, Thomas	Heath Cottage, Moor-Allerton, near Leeds.
Hargrave, James	Willaston House, Harrogate.
*Hargreaves, S. B.	
Harvey, William	Bellevue Terrace.
Henderson, Rev. W. G., D.C.L. .	Grammar School.
*Hewitson, W. W.	
Hey, Samuel, F.R.C.S. . . .	1, Albion Place.
*Holdforth, J. D.	
Holroyd, James	Gledhow, near Leeds.
Howarth, Rev. William Lee . .	Elmwood House.
Hudson, Henry	Oakwood, Roundhay, near Leeds.
Hudson, Robert John . . .	Burley-in-Wharfedale.
Ingham, Charles Alfred . . .	Belmont, Chorley Lane.
Ingham, Henry Constantine . .	Lyddon Terrace.
Jowitt, Robert Benson . . .	Elmhurst, Potternewton, near Leeds.
Joy, Walker	3½, Queen Square.
Kennedy, Thomas Stewart . .	Meanwood, near Leeds.
Kitson, James	Elmete Hall, Roundhay, nr. Leeds.
Kitson, J. Hawthorne . . .	Hyde Terrace.
Kitson, James, Jun. . . .	Headingley, near Leeds.
Kitson, Frederick William . .	Burley, near Leeds.
Latchmore, Edward . . .	4, Ridge Mount, Cliff Road.
Leather, J. T.	Leventhorpe Hall, near Leeds.
Ludolf Henry	Headingley Lane, near Leeds.
Lupton, Arthur	Headingley, near Leeds.
Lupton, Joseph	Chapel-Allerton, near Leeds.
Lupton, John	Moorlands, Headingley, nr. Leeds.
Lupton, Darnton, Jun. . . .	Harehills, Potternewton.
Lupton, Francis Martineau . .	Beechwood, Roundhay.
March, Joseph Ogden . . .	Beech Grove House, Woodhouse Lane.
Margerison, J. L.	4, Porchester Gate, Bayswater Road, London.
Marshall, Thomas, M.A. . .	Highfield, Chapel-Allerton, nr. Leeds.
Marshall, John, M.A. . . .	Bentley Lodge, Meanwood, nr. Leeds.
Marshall, Stephen Albert . .	Weetwood, near Leeds.
Maude, Edmund	Middleton Lodge, Beeston, nr. Leeds.

Meggeson, George.	6, Cromer Terrace.
Naylor, J. E.	
Nickols, Richard	Bramley, near Leeds.
*Nicholson, Mrs., Roundhay (2 shares).	
Nunneley, A. G.	22, Park Place.
Oxley, Henry	Weetwood Villa, Weetwood Road. Far Headingley, near Leeds.
Passavant, P. W.	De la Haye House, Chapeltown Rd.
Price, William Nicholson, F.R.C.S.	7, East Parade.
Prichard, W.	Bishopgate Street.
Reynolds, Richard, F.C.S. . .	Cliff Lodge, Hyde Park, Leeds.
Sagar-Musgrave, J.	Red Hall, Shadwell, near Leeds.
Stansfeld, T. W. (2 shares) . .	Weetwood Grove.
Stewart, G. M.	43, Hillary Street.
Taylor, George	Buckingham House, Headingley, near Leeds.
*Samuel Taylor.	
Teale, T. Pridgin, M.A., F.R.C.S. .	North Grange, Headingley, nr. Leeds.
Teasdale, Washington	Rosehurst, Headingley, near Leeds.
Tennant, Robert	Scarcroft Lodge, Shadwell, nr. Leeds.
Tennant, Thomas	21, Blenheim Terrace.
Tetley, F. W.	Foxhill, Weetwood, near Leeds.
Turner, Richard Bickerton . .	Bank of England, South Parade.
Wailes, William	Harrogate.
Watson, William	Elmwood, Harrogate.
Whitaker, John (2 shares) . .	Messrs. Brown & Co., Commercial St.
Whiting, John	Regent Villas, Headingley, nr. Leeds.
Wicksteed, Joseph Hartley . .	3, Eldon Terrace, Woodhouse Lane.
Wilson, John	Seacroft, near Leeds.
Wilson, Thomas, M.A.	3, Hillary Place.
Wood, Richard	Newton Villa, Potternewton, near Leeds.
Woodford, Rev. Canon, D.D. .	The Vicarage, Park Place.

ORDINARY MEMBERS, . .

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

Armistead, Rev. Charles John, M.A., F.S.A.	Mildon Hall, Suffolk.
Armistead, Joseph John . .	Chapeltown.
Atkinson, J. H.	14, East Parade.

*Bloome, Matthew	
Bowers, Rev. T. S., M.A.	Kirkstall, near Leeds.
Buckton, Joseph	Moorland Terrace.
Bulmer, John	4, Winfield Mount, Potternewton Lane.
Cadman, William	Roundhay, near Leeds.
Garlick, William	6, Hyde Terrace.
Hewitt, E. W.	Ashfield, Headingley Hill, nr. Leeds.
Ikin, Joshua Ingham, F.R.C.S.	19, Park Place.
Martin, Samuel Dickinson	Meanwood Lane, Chapel-Allerton, near Leeds.
Ramskill, Josiah, M.R.C.S.	13, Meadow Lane.
Stratten, Rev. J. R.	Park Square.
Swaine, W. E.	Highfield House, Woodhouse Lane.
Sykes, Henry Marshall	Roundhay, near Leeds.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

Allbutt, T. Clifford, M.A., M.D., F.S.A., F.L.S.	Virginia Road.
Baines, Edward Manwaring	6, Ashwood Terrace, Headingley Hill, near Leeds.
Barr, Frederick Horatio	Mount View, Headingley Lane, near Leeds.
Barr, Mrs. Robert	Mount Pleasant.
Barwick, J. M.	Glen View, Shipley.
Benson, John	19, Albion Street.
Best, William	18, Lyddon Terrace.
Bolland, W. T.	Hunslet Lane.
Booth, Joseph	Grosvenor Road, Headingley Lane, near Leeds.
Botterill, John	Flower Bank, Burley, near Leeds.
Bousfield, Charles Edward	3, Beech Grove Terrace.
Briggs, Riley	Springfield Mount.
Carter, Robert Meek, M.P.	Woodhouse Lane.
Clay, George	8, Blenheim Square.
Corson, George	Far Headingley, near Leeds.
Dawson, Edwin	17, Blenheim Terrace.
Denny, T. G.	46, Burley Street.
Dixon, J. W.	13, Vernon Road.

Eddison, Frederick	4, Woodsley Terrace, St. John's Hill.
Eddison, Robert William	Headingley, near Leeds.
Firth, William	Burley Wood House, near Leeds.
Ford, J. Rawlinson	Adel Grange, near Leeds.
Ford, T. B. P.	Ilkley, near Leeds.
Gascoigne, F. C. Trench	Parlington Park, near Leeds.
*Greenwood, Thomas	
Hargrave, John	St. Ann's Lodge, Burley, near Leeds.
Hepper, John	Clareville, Headingley, near Leeds.
Holt, Henry Percy	Cavendish Road.
Holt, Joseph	Wedderburn House, Harrogate.
Horsman, Thomas, B.A.	3, High Royd, Belle Vue Road.
Illingworth, William	Headingley Cliff, near Leeds.
Ingham, Tom	Belmont, Chorley Lane.
Irwin, Edward	Preston House, Tonbridge Street.
Irwell, Julius.	Highfield House, Headingley, near Leeds.
Jackson, Rev. Edward, M.A.	9, Brunswick Place, North Street.
*Jackson, William S.	
Kempe, Arthur	29, Brunswick Terrace.
Kemplay, Miss	St. John's Place.
Lambert, Joseph	Rose Court, Headingley Lane, near Leeds.
Lawson, Thomas	Potternewton, near Leeds.
Lawson, John	Beech Grove Hall.
Leather, J. W.	Newton Green, Chapeltown, near Leeds.
Ledgard, William	Eller Close, Roundhay.
Lupton, Joseph	Armley, near Leeds.
Manning, John	Weetwood, near Leeds.
McCheane, Rev. J. H., M.A.	Trinity Parsonage, Hyde Terrace.
March, George	Oaklands, Scarcroft, near Leeds.
Middleton, John William	Mount Terrace, Potternewton, near Leeds.
Morley, Herbert Ogle	20, Victoria Terrace.
Myers, William Beswick	Gristhorpe, near Filey.
Myers, W. C.	Grove House, Roundhay, nr. Leeds.
Nelson, Henry	St. John's Cottage, St. John's Road.
Nunneley, Thomas	10, Park Place.
Nussey, George Henry	St. Ann's Lane, Burley, near Leeds.
Nussey, Obadiah	Morley House, Headingley, near Leeds.

Nussey, Thomas	Thorpe House, Headingley Hill, near Leeds.
Nussey, Samuel Lawton	Potternewton Hall, near Leeds.
Nussey, Peter	Spring Villa, Shaw Lane, Headingley, near Leeds.
*Payne, E. E.	
Ramsbottom, S. H., M.D.	21, Park Place.
Ramsden, John	37, Hyde Terrace.
Read, Miss	Chapel-Allerton, near Leeds.
Riley, Thomas	7, Blenheim Square.
Robinson, Major	Scarborough.
Robinson, Thomas	Cushmere Villa, Clarendon Road.
Robinson, E. E.	Kirkstall Hall, near Leeds.
Sharpe, Miss	21, Victoria Place, Camp Road.
*Simpson, E. W.	
Smith, John Edward	Park Villas, Potternewton, nr. Leeds.
Smith, William Farrar	Hope Villa, Woodhouse Lane.
Stables, James	Horsforth, near Leeds.
*Talbot, George	
Temple, Rev. Henry, M.A.	St. John's Vicarage, Woodhouse Lane.
*Terrell, Joseph Mason	
Tilley, Anthony	Manor House, Victoria Grove, Headingley, near Leeds.
Tilley, T. A.	Gledhow, near Leeds.
Tome, J. W.	Carlton Hall, Bell Busk, nr. Skipton.
Townley, Richard	4, Springfield Mount.
Wade, John	Moorland Road.
Walker, Thomas	Headingley Hill, near Leeds.
Whiteley, Thomas	Blenheim Square.
Young, John	Moor Hill Farm, Headingley, near Leeds.

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Ancher, T.	9, Park Place.
Appleton, Henry	Adel Lodge, near Leeds.
Asquith, John Robert	Bond Place.
Asquith, J. W.	St. John's Terrace, Woodhouse.
Atkinson, Law	Clarendon Road.
Atkinson, C. F.	Do.
Baily, Walter	24, Hyde Terrace.
Baines, J. W.	Oatlands, Burley.

Barran, Charles	Chapel-Allerton Hall, near Leeds.
Barran, John, Jun.	5, Cromer Terrace.
Bartholomew, W. H., C.E.	Albion Villas, New Leeds.
Bedford, James	Woodhouse Cliff.
Beverley, Mrs.	Grosvenor Terrace, Headingley, near Leeds.
Beverley, Robert	Woodsley Terrace.
Beverley, W. A.	17, St. John's Terrace.
Bickerdike, Rev. John, M.A.	St. Mary's Vicarage, Beckett Street, Burmantofts.
Bilbrough, Alfred	15, Beech Grove Terrace.
Birchall, Oswald	Kirkstall Grove, near Leeds.
Bowlby, Richard	Westville, Potternewton, nr. Leeds.
Brailsford, Rev. E. J.	Churwell, near Leeds.
Braithwaite, James, M.D.	Clarendon Road.
Braithwaite, Richard Hale	Do.
Browne, J. C.	Newton Lodge, Roundhay, near Leeds.
Bruce, Willliam	Moorland Terrace.
Buckley, J. C.	10, Blenheim Terrace.
Buckton, Richard	Cumberland Lodge, Headingley Hill, near Leeds.
Bulmer, Charles	Blenheim Lodge.
Bulmer, Clifford Charles	Do.
Burton, F. H.	Newtown Works.
Butler, Edmund	Kepstorn.
Calvert, John P.	6, Springfield Place.
Campbell, Archibald	20, Hyde Terrace.
Carpenter, Rev. J. Estlin, M.A.	7, Lifton Place.
Carr, Theodore	35, Lofthouse Place.
Chadwick, W.	22, Moorland Road.
Chatwin, E. W.	1, Willow Grove Road.
Cheetham, W.	Woodbottom Cottage, Horsforth, near Leeds.
Child, J. K.	Dewsbury Moor, Dewsbury.
Clare, W., M.D.	Park Square.
Clark, Miss	S. L. Nussey, Esq., Potternewton Hall, near Leeds.
Clay, J. W.	Warwick Place.
Coates, James Irwin.	Richmond Terrace, Headingley, near Leeds.

Conyers, Joseph	Castle Grove, Headingley, near Leeds.
Cooke, William	Moorfield House, Moor-Allerton, near Leeds.
Cooper, G. I.	Woodhouse Chemical Works.
Craig, Robert	98, Briggate.
Crawford, James	Chapel-Allerton, near Leeds.
Crawford, Emmerson	Messrs. Beckett & Co., Park Row.
Crawford, J. W.	Newton Lane.
Crosley, William	33, Mount Preston.
Crossley, Louis John	Halifax.
Cuthbert, John	163, Woodhouse Lane.
Daniel, R. F.	31, Cromer Terrace.
Davey, Henry	Gwinear House, Tanfield Street.
Davis, Arthur Sladen, M.A.	Grammar School.
Davis, Edward	Alpha Cottage, Far Headingley, near Leeds.
Dawson, William	Larchfield Mills, Hunslet Lane.
Denby, Alfred	West Hill, New Leeds.
Dixon, Robert Henry	25, Virginia Road.
Dixon, Henry	6, De Grey Road.
Dolan, John Cass	North Hill Road, Headingley, near Leeds.
Douglas, Dr.	7, South Parade.
Douglas, John	Beechgrove, Oulton, near Leeds.
Dufton, Arthur Wellesley	74, Springfield Place.
Eddison, John, C.E.	1, Osborne Terrace, Virginia Road.
Emsley, G. A.	Clarendon Mount.
Falcon, Thomas	Pudsey, near Leeds.
Fenwick, Thomas	Allerton Hill, Chapel-Allerton, near Leeds.
Ferns, Francis	Cliff Road.
Foster, A. S.	Garforth, near Leeds.
Foster, Samuel	2, Aked's Terrace, Woodhouse Moor.
Fox, James, C.E.	Woodlands, Horsforth, near Leeds.
Fraser, John	Grove House, Headingley, near Leeds.
Freeman, Samuel	Newton Grove, New Leeds.
Galleway, Thomas	Blenheim Terrace.
Gamble, J. H.	Kendall Street.
Gaunt, Miss	4, Victoria Place, Camp Road.

Gaunt, J. W.	Farsley, near Leeds.
Glover, D. R.	16, De Grey Road.
Goodall, Charles	Francis Street, New Leeds.
Granger, C.	Newton Grove, Chapeltown Road.
Greene, John	Whinmoor, near Seacroft.
Greenwood, F.	School of Medicine, Park Street.
Greenwood, W. F.	Park Villas, Hyde Park Road.
Haigh, Rev. C. D., M.A.	3, Woodsley Terrace.
Hall, Frederick	North Street.
Hall, William	1, Hillary Place.
Hallewell, Miss	2, Woodsley Terrace.
Hallilay, John	Burley Road.
Hamilton, R. W.	Cardigan Villas, Shaw Lane, Headingley, near Leeds.
Hammond, Thomas	Hanover Square.
Handcock, George	5, Leopold Mount, Chapeltown Road, near Leeds.
Harding, J. W.	Hillary Lodge, Cavendish Road.
Hargrave, Charles	Oxley Hill, Moortown, near Leeds.
Harrison, Rev. F. L.	Vicarage, Burley, near Leeds.
Harvey, Thomas	Ashwood, Headingley Hill.
Hassé, A. B.	31, Commercial Street.
Headland, Thos, Jun.	49, Briggate.
Heald, Alfred William	8, Springfield Mount.
Hebblethwaite, A. R.	12, Blenheim Terrace.
Hebblethwaite, J. W., Jun.	Moor-Allerton Hall, near Leeds.
Hewetson, Henry	St. John's Terrace.
Hezmalhalch, Joseph	Thorner, near Leeds.
Hiley, Rev. R. W.	Thorparch Grange, Tadcaster.
Hill, John William, M.A.	Lynton Villa, Mount Preston.
Hill, M. S.	30, Mount Preston.
Hindle, J. E.	Bramhope, near Leeds.
Hirst, J. A.	Hyde Lodge, St. John's Hill.
Hobson, Frederick	49, Briggate.
Hodgson, J. P.	10, De Grey Terrace.
Holmes, John	Methley, near Leeds.
Holmes, Joseph	92, Meadow Lane.
Holt, Edward	The Manor House, Farnley, near Leeds.
Hudson, Walter	Grey Stone House, Adwalton, near near Leeds.

Huggon, William, F.C.S.	50, Springfield Place.
Hurd, Samuel	Leopold Mount, Chapeltown Road.
Irwin, G.	30, Albion Street.
Jackson, G. W.	5, Park Place.
Jackson, William Thomas	Headingley Hill, near Leeds.
Jeffery, Thomas Richardson	54, Skinner Lane.
Jepson, E. G.	8, Woodsley Terrace.
Jessop, T. R., F.R.C.S.	32, Park Square.
Jowitt, Miss	5, Newton Grove, New Leeds.
Joy, Lomas	Ridge House, Kingston Grove, Woodhouse Lane.
Kirkby, Thomas	8, Beech Grove Terrace.
Kirkby, Frederick	3, Springfield Mount.
Kirk, James	Killingbeck Hall, near Leeds.
Knight, J. C.	Queen's Place, Chapel-Allerton, near Leeds.
Land, R. T.	Leopold Street, New Leeds.
Lawson, Arthur T.	Beech Grove.
Leadman, Alexander	St. Ives, Headingley, near Leeds.
Lee, W.	8, Samuel Street, Camp Road.
Legard, Albert G.	5, Montpelier Terrace.
Loe, James S.	147, Woodhouse Lane.
Longbotham, George	21, Park Square.
Lupton, Arthur G.	Beechwood, Roundhay, near Leeds.
Lupton, Edward Arthur	4, Blenheim Terrace.
Lupton, Henry	The Elms, Chapel-Allerton, near Leeds.
Lupton, William W.	Newton Hill, near Leeds.
Marsden, H. R.	Avenue House, Woodhouse Lane.
Marshall, W. E.	1, Beech Grove Terrace
Matheson, W. W.	8, Hyde Terrace.
Matterson, Miss	8, Cavendish Road.
Maude, Miss	Knowsthorpe House, near Leeds.
Middleton, William	Gledhow Grange, near Leeds.
Moore, Major	3, Woodhouse Square.
Moxon, John	New Leeds.
Musgrave, Albert	Belle Vue Road.
Naylor, G. F.	Bond Street, Wakefield.
Naylor, J. W.	Allerton Hill, Chapeltown, nr. Leeds.
Newstead, J. S.	Beech Grove Terrace.
Paley, Miss	West View Terrace, Chapeltown, near Leeds.

Pawson, A. H.	Lawn's House, Farnley, near Leeds.
Pawson, John Edward	Do.
Pearson, John Thomas	Weetwood Road, Far Headingley, near Leeds.
Pearson, G. B.	Headingley, near Leeds.
Pope, Edward	Farfield, Moor-Allerton, near Leeds.
Pope, R.	Clarendon House.
Powell, William	13, Park Place.
Price, Henry W.	
Ralph, John	8, Brunswick Place, North Street.
Rayner, George	Hyde Gardens, Clarendon Road.
Rayner, John	17, Vernon Road.
Redmayne, John	Chapeltown, near Leeds.
Reffitt, J. W.	Hanover Street.
Reynolds, Freshfield	13, Briggate.
Richards, F. S., U.S.A. Consul	2, Queen Street.
Rickards, G. H. L.	7, Moorland Road.
Rider, James	4, High Royd, Belle Vue Road.
Robinson, Alfred	49, Lofthouse Place.
Robinson, Frederick	14, Mount Preston.
Robinson, Thomas	Castleton Lodge, Armley, nr. Leeds.
Robinson, Rev. Thomas	Farsley Parsonage, near Leeds.
Rooke, Charles S.	Newton Hill, Potternewton, nr. Leeds.
Rooke, R. L.	Do.
Rowley, Walter, C.E.	Headingley, near Leeds.
Rushworth, C. W.	Hillary Mount, Woodhouse Lane.
Ryder, Charles	Regent Villas, Headingley, nr. Leeds.
Salt, George	Saltaire, near Bradford.
Scattergood, Thomas	41, Park Square.
Seaton, James	Wintoun House, North Street.
Shackleton, Joseph	Wortley, near Leeds.
Smith, Edward James	Grosvenor Terrace, Headingley, near Leeds.
Smith, Stephen Ernest	Gordon Villas, Woodhouse Lane.
Smith, John Wales	2, Gordon Villas, Woodhouse Lane.
Smith, Mrs. Henry	Highfield, Headingley, near Leeds.
Snowdon, Henry	12, Claypit Lane.
Snowdon, Rev. R. K.	Chapel-Allerton, near Leeds.
Stables, Ashley	Horsforth, near Leeds.
Style, Rev. G., M.A.	Giggleswick Grammar School.
Swaine, John	North Hill Road, Headingley Hill, near Leeds.

Sturgeon, Thomas	Burley Mount, near Leeds.
Symes, E. West, M.B.	The Dispensary.
Sykes, Alfred W.	Cookridge, near Leeds.
Taylor, T. C.	Dyehouse, Birstall, near Leeds.
Thackray, Joseph	Headingley, near Leeds.
Thompson, Vincent T.	High Royd, Belle Vue Road.
Thoms, G. E.	Aire and Calder Navigation Company, Dock Street.
Thorne, H. A.	14, Cobourg Street.
Tiffany, George John	17, Grove Terrace.
Todd, William	Blundell Place.
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Aug. 13/74

LEEDS

PHILOSOPHICAL AND LITERARY SOCIETY

THE ANNUAL REPORT

For 1873-74.

Le 1

THE

FIFTY-FOURTH REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL & LITERARY

SOCIETY

AT THE

CLOSE OF THE SESSION 1873-74

Read at the Annual Meeting, May 5th, 1874

LEEDS
PRINTED BY McCORQUODALE & CO., BANK STREET
MDCCCLXXIV.

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RESPECTING THE PROPERTY OF THE SOCIETY

PASSED OCTOBER 8TH, 1860

That in the event of a dissolution of this Society, its Property and Effects, whether real or personal, shall not be disposed of for the personal benefit of the Members, but shall be appropriated in such manner for the advancement of Science, Literature, or Art, in the town of Leeds, as shall be determined by a majority of the Members at an extraordinary Meeting to be convened for that purpose. But that no dissolution of the Society shall take place without the consent in writing, of a majority holding not less than two-thirds of the Proprietary Shares.

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Every person desirous of bequeathing to the Society any sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form :—

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REPORT OF THE COUNCIL

AT THE CLOSE OF THE

FIFTY-FOURTH SESSION

DURING the past year, the number of Subscribers to the Society has remained nearly stationary. Sixty-nine new names have been added, while fifty-seven have been withdrawn. The number of Members is practically constant; it has lately received a small addition in consequence of the forfeiture and re-issue of three lapsed shares.

The Council acknowledge with thanks a renewed donation of £10 from Thomas Emsley, Esq., of Burley-in-Wharfedale.

The following is a list of the Lectures delivered before the Society during the past Session :—

1. "Epochs in the progress of Physiological Science." J. I. Ikin, F.R.C.S., Vice-President. *Read Oct. 21st*, 1873.
2. "Recent Researches in Spectrum Analysis." J. Norman Lockyer, F.R.S. *Read Oct. 30th*, 1873.
3. Second Lecture. J. Norman Lockyer, F.R.S. *Read Nov. 6th*, 1873.
4. "Robespierre." John Morley. *Read Nov. 25th*, 1873.
5. "The Study of Figure Painting." Edward J. Poynter, A.R.A., *Read Dec. 9th*, 1873.
6. The Conversazione. *Held Dec. 16th*, 1873.
7. "The Chemistry of the Alcohols." Walter Baily, M.A. *Read Jan. 6th*, 1874.
8. "W. M. Thackeray, and the Influence of his Writings." T. Wemyss Reid. *Read Jan. 20th*, 1874.
9. "The Mollusca of the European Seas." J. Gwyn Jeffreys, F.R.S. *Read Feb. 3rd*, 1874.

10. "River Denudation and Lake Basins." T. McK. Hughes, M.A., Woodwardian Professor of Geology, Cambridge. *Read Feb. 17th*, 1874.
11. "The Regeneration of Germany and the Baron vom Stein." J. R. Seeley, M.A., Professor of Modern History, Cambridge. *Read Feb. 24th*, 1874.
12. Second Lecture. Professor J. R. Seeley, M.A. *Read Mar. 3rd*, 1874.
13. "Khiva and the recent Russian Campaign." Arminius Vámbéry, Professor of Oriental Languages, Pesth. *Read Mar. 10th*, 1874.
14. "The Localisation of the Functions of the Brain." David Ferrier, M.D., Professor of Forensic Medicine, King's College, London. *Read Mar. 17th*, 1874.
15. "King Lear." J. W. Hales, M.A. *Read April 7th*, 1874.

For several years past the Council have arranged for the annual delivery of one or more courses of elementary lectures on scientific subjects. The announcement by the Local University Extension Committee of five courses of afternoon and evening lectures on Political Economy, Physical Geography, and Constitutional History, appeared to occupy the ground in an adequate manner during the winter-session which is just completed. In the early part of the session, public scientific lectures, provided in great part at the cost of the Gilchrist Trustees, supplied the demand for instruction in such subjects. No courses of lectures on scientific subjects, at once elementary and systematic, have therefore been provided by the Council of this Society during the last year, but they continue to recognize the value of such means of instruction, and desire to turn their resources more and more to educational account.

The Annual Conversazione was held on December 16th. A series of photographic views of Egypt was exhibited by the Oxy-hydrogen light, and explained by the Rev. J. Estlin Carpenter, M.A., who has recently travelled in Egypt. Both the address and the exhibition proved

completely successful, and gave much pleasure to a full audience. In pursuance of a plan, which was adopted at the previous Conversazione and advocated in last year's Report, Etching was adopted as a special subject for illustration on this occasion. The process, in all its stages, was demonstrated, and a series of highly interesting examples by Seymour Haden, R. S. Chattock, P. G. Hamerton, and others, was exhibited. Tilghman's Sand-Blast Machine was shewn at work by Mr. E. H. Carbutt, and attracted much attention. Among the numerous remaining objects of curiosity, were some remarkable Japanese Vases exhibited by Mr. John Rhodes, a collection of Oriental Pottery and Armour contributed by Mr. John Holmes, and Wilde's Magneto-Electric Machine exhibited by Mr. Titus Salt. The Staircase was lighted throughout the evening by the "Air-gas Light," under the direction of Messrs. Verity.

The attention of the Curator has been specially directed during the past year to the Antiquities and the lower classes of Vertebrata. The collection of Antiquities has been re-arranged on a different principle. Instead of a simple geographical division, such as previously obtained, the objects are now distributed into the three primary groups of Pottery, Stone Implements and Metal-work, the subdivisions being geographical, and in some degree chronological. The collections of Cave Relics, objects from Lake Dwellings, and Egyptian Mummies, remain distinct from the three chief groups. The whole has been cleaned, and printed labels are substituted for the old manuscript labels.

The Reptilia, Amphibia, and Fishes are now completely named, and may be reported as in sound condition. Where necessary, the specimens in spirit have been remounted. Here, also, printed labels are universally adopted. Preparations of a crocodile's skull, and a turtle's skull, in which every element is separated and named, have

been introduced. The collections of these lower Vertebrata in the Society's Museum are very unequal. Some important groups are represented only by old and defective examples. The Crocodilia, the Perennibranchiate Amphibia and the Ganoidei, on the other hand, prove to be of great interest, and fairly complete. The Curator reports that in the naming and arrangement of the Fishes, he has received valuable aid from his assistant, Mr. C. J. Clarke, who has attentively studied this group, and has determined or verified all the species in the possession of the Society, by means of Dr. Günther's Catalogue of Fishes.

Three table cases in the North Geological Room, containing remains of Pleistocene Mammalia and Birds, have been cleaned, re-arranged, and re-named, printed labels being everywhere attached to the specimens.

The printing of labels continues to occupy much of the time of the Curator's Assistant. The number of separate labels required during the past year has been 1,840, six copies of each being about the average number of impressions taken. The quality of the work has greatly improved since the new press and type presented by the late John Manning, Esq., came into use.

One Descriptive Guide, viz., that to the Fossil Collection, has been issued since the last Annual Meeting. The sale of the guides continues to give satisfactory evidence of their usefulness. In ten months (July 1st, 1873, to April 30th, 1874), 644 copies have been sold.

During the ten months ending April 30th, 1874, 32,155 persons have been admitted to the Museum by payment. The number is slightly less than in the corresponding months of 1872-3, but exceeds the admissions during the same part of any preceding year.

In December last, the Council heard that a valuable collection of fossils from the roof of the Low Main Coal of

the Northumberland coal-field might be purchased. The collection was particularly suitable to the wants of the Leeds Museum, since it included several fine examples of the Labyrinthodonts of the Coal Measures, besides an unrivalled specimen of the palate of *Ctenodus*. The liberality of several friends enabled the Council to purchase the collection, and our Museum is therefore enriched by the addition of several new, rare, and interesting types of Carboniferous Fishes and Amphibia.

The Council desire to place on record the circumstances attending the discovery of some remarkable Mammalian remains added to the Society's Geological Collection during the past year. In working one of the faces of a limestone quarry at Raygill, near Skipton, the men discovered bones and teeth imbedded in a mass of glacial clay, which occupied a vertical fissure. The fissure is eight or nine feet wide, and of unknown depth. It is nearly filled up by the glacial clay, which includes rounded pebbles of Millstone Grit and other local rocks. In one place, a cavity of considerable size has been left, which presents the appearance of a cave, and adjacent to this the principal remains have been found. The only remains hitherto deposited in the Museum are a canine tooth of *Hippopotamus major*, Desm., part of a tusk of *Elephas primigenius*, Blum., and fragments of plates from a molar of the latter animal. For these highly important objects, we are indebted to P. W. Spencer, Esq., the proprietor of the quarry, and to E. S. Spencer, Esq., who superintended the excavation, and most carefully washed out the fragile teeth from the tenacious clay in which they were contained. During the further progress of the works, fresh discoveries may be expected, and it is hoped that any further remains which may be found will be deposited in this, the nearest and most central local museum. Pains have been taken to

acquaint the workmen with the importance attached to such objects as those lately disinterred, and the supervision of the proprietors and of the intelligent foreman will doubtless prevent the careless or ignorant destruction which is too common in these cases. The geological interest of the remains in question is far greater than their zoological or anatomical value. It has been disputed whether the fauna typified by the Mammoth and Hippopotamus is wholly post-glacial, or whether it extends backwards into glacial and inter-glacial deposits. The discoveries at Raygill add weight to the arguments of those who maintain the latter view. In attaching to these fragments an importance which may seem exaggerated to those who are not interested in their geological significance, we are supported by the opinion of Mr. Prestwich, late President of the Geological Society, who recently visited the fissure, and pronounced it a most interesting and instructive case. We are indebted to John Brigg, Esq., of Keighley, for early information respecting the discovery, and for the communication of specimens.

A list of many interesting and valuable donations to the Museum will be found in a later section of this Report.

The Council have to regret the loss by death of two of their number during the year that has just closed. Mr. James Garth Marshall was one of the Original Proprietary Members of the Society, and a member of its Council for upwards of forty years. He filled the offices of President, Vice-President, and Curator in Geology at different times, having continued to take charge of the geological department from 1837 till his death. Mr. Marshall contributed several papers, which were read at the Society's meetings. We find one on Emigration, another on the Philosophy of Amusement, a third on Statistical Enquiries, and a fourth

on Colonization. In 1857, he gave an address on the Geology of the Lake District. A year later, when the British Association met in Leeds, the substance of this address was presented to the Geological Section of that scientific body. The memoir was distinguished by the careful manner in which a difficult and little-explored subject was approached. Notwithstanding the rapid progress of geological research, it still preserves its interest, and that part of the paper which discusses the sub-division of the Silurian Rocks will probably be found to possess permanent value. The Museum of the Society owes much to Mr. Marshall's liberality. Among his donations to the Zoological, Geological, and Industrial collections, the large *Plesiosaurus*, the skeleton of *Ursus spelæus* from Sundwig, Westphalia, the fossils from the Lake District, and the specimens of Flax in different stages of growth and manufacture, require special mention.

Mr. John Manning joined the Council in 1869, and since that period took a constant share in its proceedings. By his decease, his colleagues have to regret the unexpected removal of a sincere friend of the Society.

The elevation of Canon Woodford to the see of Ely has necessarily prevented his re-election to the office of President, and deprived the Society of the services of one who, from his first coming into residence, had shewn a warm interest in its welfare.

By the lamented death of Prof. Phillips, the Society loses one of its oldest and most valued Honorary Members. It is unnecessary to notice here his eminent services to Geological science; but it is of interest to remark that his first course of lectures on Geology was delivered in the Lecture Hall of this Society in December and January, 1825-6. One of the Hon. Secretaries and the Curator attended the funeral at York on April 30th, as a last mark

of respect from the Society. Prof. Phillips had been an Honorary Member exactly fifty years.

It will be remembered that the Rating Bill introduced by Government in the last session of Parliament proposed to remove the exemption from rates enjoyed by scientific and literary societies for upwards of thirty years. The change appeared to the Council of this Society injurious and dangerous to many institutions which have long done good work in the dissemination of scientific knowledge. The imposition of an unexpected tax, proportionate not to the income of a society, but to its fixed capital, would obviously discourage any extension of premises, while it would cripple the operations of many small institutions. The Council addressed petitions to the Houses of Parliament, and explained their views to several influential members of both. Aided as they were by similar representations from other Philosophical Societies, and especially from the Yorkshire Union of Mechanics' Institutes, the officers of the Society received several promises of assistance. The measure was rejected by the House of Lords on other grounds, and it is to be hoped that the resistance offered by the societies concerned may have its effect in preventing the re-introduction of a similar clause whenever the question of local taxation may again be considered by Parliament. The Council have subsequently addressed a memorial to the General Committee of the British Association, requesting that body, through its Parliamentary Committee, to watch over any future legislation which shall concern the interests of local scientific bodies.

The fourth Report of the Royal Commission on Scientific Instruction and the Advancement of Science discusses among other matters the present state of Provincial Museums, and the means of rendering them more useful. The Commissioners recommend :—

"That, in connection with the Science and Art Section of the Education Department, qualified naturalists be appointed to direct the collection of specimens in order to supply whatever deficiencies exist in the more important provincial museums; and also in order to organize typical Museums, to be sent by the Department of Science and Art into the provinces to such Science Schools as may be reported to be likely to make them efficient instruments of scientific instruction.

"That a system of inspection of provincial museums be organised with a view of reporting on their condition, and on the extent to which they are usefully employed, and whether the conditions of the loan or grant from the Department of Science and Art have been fulfilled."

Your Council are glad to recognize in these recommendations a possible means of distributing the scientific treasures of the nation in a more equitable and advantageous manner. They believe further that suggestions from qualified inspectors would greatly increase the value of most of our provincial collections. Some attention to the interests of secondary education, especially in the large centres of industry and population, will probably be seen hereafter to belong to the legitimate work of the Education Department. The growing completeness and efficiency of the State provision for primary education will conciliate some who might formerly have looked with distrust upon a scheme for promoting scientific instruction by means of State aid. It will also prepare a class of students capable of profiting by increased facilities for training in science.

The Commissioners also recommend :—

"That the establishment of lectures on Science, accessible to all classes on the payment of a small fee, should be promoted by the Government in the great centres of population.

"That the proposed lectures be of two kinds (1) lectures of an elementary character on the general principles and most important

facts of Science; (2) lectures specially intended for the working classes on the application of Science to the arts and industries of the country."

In a previous Annual Report the Council alluded to the proposed scheme for the establishment of a College of Science for Yorkshire. Within the past few days the Donors have met in this Hall, and have adopted a Constitution for their undertaking. The Council recognize in the College the basis of a powerful and lasting influence for the advancement of Science in this town and district, and believe that before long such influence will re-act in a direct and favourable manner upon our own Society.

A Summary of Meteorological Observations is appended. It is necessary to call the attention of the Members and Subscribers to the fact that by special resolution of the Council the financial statement is this year made up to the end of April, and that it is proposed in future to present it complete at the Annual Meeting. This year the receipts and expenditure given in the balance-sheet cover a period of ten months only.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1873.

1873.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January	40·6 Fah.	29·476	2·367
February	36·4 ,,	29·956	0·878
March	40·9 ,,	29·654	2·278
April	46·8 ,,	29·877	0·478
May	51·0 ,,	29·768	2·194
June	59·3 ,,	29·790	1·126
July	65·1 ,,	29·740	2·615
August	61·3 ,,	29·709	1·957
September	54·2 ,,	29·756	0·627
October	47·7 ,,	29·615	1·844
November	44·2 ,,	29·710	2·256
December	43·2 ,,	30·022	0·335

The mean monthly temperature was 49·2°.

The mean monthly height of the barometer was 29·756 inches.

The total rainfall for the year was 18·955 inches.

The greatest degree of heat, as indicated by the thermometer in the sun, was 101° on July 22; the greatest in the shade was 96° on July 22; and minimum 15° on February 25.

The greatest barometric pressure was on February 18, being 30·611 inches, the temperature of the mercury being 50°; the least pressure was on January 20, being 28·241 inches, the temperature of the mercury being 46°.

The greatest fall of rain was on November 6, being ·723 inches.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the mean level of the sea, 137 feet; height of the rain-gauge above the street, 46 feet.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY

STATEMENT OF RECEIPTS AND EXPENSES FOR TEN MONTHS, 1873-4

(JULY 1ST, 1873, to APRIL 30TH, 1874)

RECEIPTS.	£	s.	d.	£	s.	d.
To Curator's Balance	70	4	2			
				70	4	2
To Subscriptions of—						
,, 86 New Proprietary Members, at 21*s.*	90	6	0			
,, 1 ditto (1874-5) ..	1	1	0			
,, 71 New Ordinary Members, at 21*s.* ..	74	11	0			
,, 13 Old Ordinary Members, at 42*s.* ..	27	6	0			
,, 203 Old Annual Subscribers, at 21*s.* ..	213	3	0			
,, 36 New Annual Subscribers, at 21*s.*	37	16	0			
,, 168 Old Annual Subscribers, at 7*s.* 6*d.*	63	0	0			
,, 34 New Annual Subscribers, at 7*s.* 6*d.*	12	15	0			
,, Arrears	5	5	0			
				525	3	0
,, Rent of Cellars	50	0	0			
,, Rents of Lecture Room	91	15	0			
				141	15	0
,, Receipts for the Museum	133	19	7			
,, Receipts for the Conversazione ..	15	15	0			
				149	14	7
,, Sale of Descriptive Guides	2	13	8			
,, Donation (T. Emsley, Esq.), 1871-2..	10	0	0			
,, ,, ,, 1872-3..	10	0	0			
,, ,, the late John Manning, Esq.	5	10	0			
,, Sale of Forfeited Shares	60	0	0			
,, Coal Fossil Fund	17	11	0			
,, Sundries	0	8	9			
				106	3	5
				£993	0	2

DISBURSEMENTS.	£	s.	d.	£	s.	d.
By Balance due to Bank (July 1st, 1873)	145	18	4			
				145	18	4
,, Repairs	27	16	6			
,, Taxes and Rates	2	3	0			
,, Insurance	13	15	0			
,, Coals	14	13	2			
,, Gas	14	11	0			
				72	18	8
,, Salaries—Curator	250	0	0			
,, Curator's Assistant ..	34	8	0			
,, Porter	58	14	6			
				343	2	6
,, Collections—Geological	35	0	6			
,, Zoological	7	0	6			
,, Archæological	2	10	6			
,, Library	14	14	10			
				59	6	4
,, Postages	16	16	9			
,, Printing and Advertising	95	15	0			
,, Lectures	125	18	0			
,, Conversazione	49	13	8			
,, Bankers' Commission	6	18	0			
,, Sundries	38	5	10			
				333	7	3
,, Balances—Bankers'	6	0	7			
,, Curator's	32	6	6			
				38	7	1
				£993	0	2

FRAS. M. LUPTON,
JOHN MARSHALL, } AUDITORS.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY

1873–4

GEOLOGY AND MINERALOGY

Permian fossils, viz :— Phyllopora Ehrenbergii (2 specimens) Fenestella retiformis (6 specimens) Calamopora macrothi (2 specimens) Synocladia virgulacea? Miliola pusilla (8 specimens) Cyathocrinus ramosus (6 specimens) Macrodon striata (2 specimens) Pecten pusillus (5 specimens) Monotis speluncaria (4 specimens) Productus horridus (12 specimens) Discina Koninckii (2 specimens) Strophalosia lamellosa (7 specimens) Lingula Credneri (5 specimens) Camarophoria crumena (7 specimens) Terebratula elongata (8 specimens) Spirifera alata (4 specimens)	Mr. Thomas Parker, Oldham.
Cast of Skull of Labyrinthodont (Loxomma Allmanni), from Blue Flats Ironstone Measure, Old Park Pits, Waggoner's Fold, near Dawley, Salop	Mr. George Maw, Benthall Hall, Broseley.
Gyracanthus formosus, from the Ironstone Measures, Tingley	Mr. W. H. Eagland.
Goniatites Listeri, from Holmfirth.....	Mr. Isaac Exley, Holmfirth.
Collection of Fishes and Labyrinthodonts, from Newsham, including remains of Pteroplax, Anthracosaurus, Ctenodus, &c.	Dr. Chadwick, Mr. Filliter, Mr. J. Rawlinson Ford, Dr. Heaton, Mr. Ikin, Mr. John Jowitt, Mr. F. M. Lupton, Mr. Manning, Mr. Reynolds, Mr. John Rhodes, Mr. T. W. Stansfeld, Mr. R. B. Turner, Mr. Wilson.

Nautilus (Mountain Limestone) Bones of Ichthyosaurus Diplopterus (Devonian) 2 Specimens of Cannel Coal Euomphalus rotundatus (Mountain Limestone) Ammonites Parkinsoni (Oolite) Crystals of Fluor Vesicular Trap Mica Schist Ostrea grandis Columnar Dolomite and five other specimens	Purchased by the Society.
Montlivaltia Victoriæ (5 specimens), Middle Lias, Cherrington, Worcestershire Montlivaltia mucronata (3 specimens), Lower Lias, Fenny Compton, Warwickshire 4 Slabs of Archæoniscus Brodiei, Middle Purbeck, Isle of Wardour, Wilts.	Rev. P. B. Brodie, M.A., Rowington, near Warwick.
Tusk of Mammoth (Elephas primigenius) and canine of Hippopotamus major, from a fissure in a limestone quarry at Lothersdale	Mr. P. W. Spencer, Lothersdale.
Coal Shale, with Neuropteris heterophylla, stained red by infiltration? Conisbro' ...	Mr. Simpson, Fire-Clay Works, Conisbro'.
Piece of the Rhætic bone-bed, Westbury, with Fish and Reptilian Remains	Mr. W. C. Lucy, Grange Court, Gloucester.
Rock specimens, from the Whin Sill of Northumberland	Sir W. C. Trevelyan, M.A., F.R.S.
Collection of Minerals, viz. :— Fine Crystal of Quartz Towanite upon Quartz Lazulite in Quartz Pyrite upon Quartz (2 specimens) Native Gold in Quartz Native Silver in Agate Sulphide of Antimony on Quartz	Mr. W. Sykes Ward, F.C.S.

ZOOLOGY AND BOTANY

Fasciated Stem of Asparagus.....	Dr. Greenhow.
Pair of Antelope's Horns (Strepsiceros) ...	Mr. T. Wilson, M.A.
Kestrel.....	Mr. T. W. Stansfeld.
Fresh Specimen of Zamenis hippocrepis ...	Mr. F. Greenwood.
Hyalonema mirabilis, Enosima, Japan	Mr. G. Alderson Smith, Cottingley Hall, Bingley.

Two live Hedgehogs	Mr. T. W. Stansfeld.
Acmæa testudinalis, from Whitburn. (Perhaps transported in ballast.)	Mr. T. Wilson, M.A.
Live Specimens of Lacerta agilis	Mr. Henry Watts.
Macroscelides proboscideus, South Africa...	Mr. Oates.
Sparrow Hawk, shot at Bramhope.....	Mr. T. W. Stansfeld.

ARCHÆOLOGY AND ETHNOLOGY

Ten-dollar Note of the Confederate States..	Mr. Saville.
Medal, with inscription "To Hanover," 1853; penny of George III., 1779; and penny and halfpenny (illegible), found in Sheepscar Beck	Mr. Sheldon.
Kaffir Walking-staves.....	Mr. T. Pollard.
Further donation of 34 Flint Implements, found at Adel, near Leeds	Mr. Twigg, Reformatory, Adel.

TECHNOLOGY

Specimen of Gum Animi, containing Insects	Mr. J. A. Hirst.
Specimens of Gum Animi	Mr. J. A. Hirst.
Seventeen preparations illustrative of Sugar and its manufacture Piece of Sugar Cane	Mr. H. Pocklington.

MISCELLANEOUS

Engine-Counter, for registering the admissions to the Museum	Messrs. T. R. Harding and Sons.
New Printing Press and two founts of Type (Ancient Primer and Double Pica Ancient)	The late Mr. Manning.
Embossing Press.....	The late Mr. Manning.
Photographic Portrait of the late James Garth Marshall, Curator in Geology to this Society	Mr. J. I. Ikin.

PUBLICATIONS

Reliquiæ Aquitanicæ, Parts XII., XIII., XIV.	Execs. of the late Henry Christy, Esq.
Nuova Italia	John McCosh, M.D., Wells House, Ilkley.
Trigonometrical Survey of India, Vol. I. ...	Her Majesty's Secretary of State for India, India Office, London.

Catalogue of Greek Coins, Italy Catalogue of Hemiptera Heteroptera, Part VIII. Hand-list of Edentate, Thick-skinned, and Ruminant Mammals Catalogue of Prints and Drawings, Div. I., Vol. II. Fac-similes of Ancient Charters.....	Trustees of the British Museum.
4th and 5th Quarterly Reports of the Sub-Wealden Exploration Committee	Mr. E. H. Willett, Brighton.
9th Annual Report of the Board of State Charities of Massachusetts	The Board of State Charities of Massachusetts.
36th Annual Report of the Board of Education of Massachusetts	The Board of Education of Massachusetts.
19th and 20th Annual Reports of the Board of Agriculture of Massachusetts.....	The Board of Agriculture of Massachusetts.
Report of the U.S. War Department for 1872	Mr. A. J. Myer, Brigadier-General and Chief Signal Officer, U.S. Army.
Publications relating to Patents of Victoria, viz. :— Patents and Patentees, Vols. I. to VI. Abstracts of Specifications of Patents, Vols. I. and II. Statistical Tables of Victoria Abstracts of English and Colonial Specifications for the Preservation of Food, 1870.....	The Registrar-General of Victoria, New South Wales.
U.S. Geological Survey of Montana, Idaho, Wyoming, and Utah, 1872.....	Mr. F. V. Hayden, U.S. Geologist, Washington.
Brief Sketches of the Parishes of Booterstown and Donnybrook in Co. Dublin, Parts III. and IV.	Rev. B. H. Blacker, M.A., Booterstown, Co. Dublin.
Algebra identified with Geometry	Mr. A. J. Ellis, F.R.S., London.

PERIODICALS

WEEKLY

Nature	Purchased.
Leader (Australian Newspaper).....	Publishers.
Australasian.....	Publishers.

MONTHLY

American Journal of Science and Arts Annals and Magazine of Natural History Geological Magazine	Purchased.

Illustrated Australian News	Publishers of the "Leader."
Monthly Notices of the Proceedings of the Royal Society of Tasmania	Royal Society of Tasmania.
Journal of the Chemical Society	Chemical Society.
Bulletin of the Essex Institute	Essex Institute, U.S.A.
Monthly Notices of the Royal Astronomical Society	Royal Astronomical Society.

QUARTERLY

Quarterly Journal of Science Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society ...	Geological Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar-General.
Journal of the Royal Historical and Archæological Association of Ireland	Royal Historical and Archæological Association of Ireland.
Journal of the Anthropological Institute ...	Anthropological Institute.
Proceedings of the Geologists' Association .	Geologists' Association.

ANNUALLY

Philosophical Transactions	Purchased.
Mineral Statistics of the United Kingdom .	Director General of the Geological Survey.
Communications to the Yorkshire Philosophical Society	Yorkshire Philosophical Society.
Proceedings of the Glasgow Philosophical Society	Glasgow Philosophical Society.
Mittheilungen der kais. und königl. geographischen Gesellschaft in Wien	Royal Imperial Geographical Society of Vienna.
Proceedings of the Academy of Natural Sciences of Philadelphia.....	Academy of Natural Sciences of Philadelphia.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Proceedings of the Royal Society of Edinburgh Transactions of do.	Royal Society of Edinburgh.
Publications of the Ray Society.....	Purchased.
Abstract of the Proceedings of the Liverpool Geological Society	Liverpool Geological Society.
Transactions of the Edinburgh Geological Society.....	Edinburgh Geological Society.

Kongliga Svenska Vetenskaps Akademiens Handlingar Do. do. Lefnadsteckningar Öfversigt af Kongliga Vetenskaps Akademiens Förhandlingar	Royal Swedish Academy of Sciences.
Natural History Transactions of Northumberland and Durham	Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne, and Tyneside Naturalists' Field Club.
Proceedings of the Berwickshire Naturalists' Club.....	Berwickshire Naturalists' Club.
Publications of the Palæontographical Society.....	Purchased.
Proceedings of the Liverpool Literary and Philosophical Society	Liverpool Literary and Philosophical Society.
Proceedings of the Boston Society of Natural History Memoirs of do.	Boston Society of Natural History.
Transactions of the Historic Society of Lancashire and Cheshire	Historic Society of Lancashire and Cheshire.
Memoirs of the Royal Astronomical Society	Royal Astronomical Society.
Greenwich Observations.....	Lords of the Admiralty.
Transactions and Proceedings of the New Zealand Institute.....	New Zealand Institute.
Proceedings of the Warwickshire Naturalists' and Archæologists' Field Club	Warwickshire Naturalists' and Archæologists' Field Club.
Annual Report and Papers of the Associated Architectural Societies.....	Associated Architectural Societies.
Journal and Annual Report of the Royal Institution of Cornwall.....	Royal Institution of Cornwall.
British Association Report.....	British Association.
Annual Report of the Royal Cornwall Polytechnic Society	Royal Cornwall Polytechnic Society.
Annual Report of the Smithsonian Institution	Smithsonian Institution.
Annual Report of the Yorkshire Philosophical Society	Yorkshire Philosophical Society.
Annual Report of the Warwickshire Natural History and Archæological Society	Warwickshire Natural History and Archæological Society.
Annual Report of the U.S. Patent Office...	United States Patent Office.

Annual Report of the Hull Literary and Philosophical Society	Hull Literary and Philosophical Society.
Annual Report of the Belfast Naturalists' Field Club	Belfast Naturalists' Field Club.
Annual Report of the Liverpool Free Public Library, Museum, and Schools	Free Library, Liverpool.
Annual Report of the Geologists' Association	Geologists' Association.
Annual Report on the Sanitary Condition of Leeds	Medical Officer of Health for Leeds.
Annual Report of the Minnesota Historical Society	Minnesota Historical Society.
Annual Report of the Museum of Comparative Zoology at Harvard College, U.S.A.	Museum of Harvard College, Cambridge, Mass.
Annual Report of the Birkenhead Literary and Scientific Society	Birkenhead Literary and Scientific Society.
Annual Report of the Winchester College Natural History Society	Winchester College Natural History Society.

Zeitschrift für Wissenschaftliche Zoologie (4 pts. a year)	Purchased.
Canadian Journal (3 or 4 pts. a year)	Canadian Institute, Toronto.
Yorkshire Archæological and Topographical Journal	Yorkshire Archæological and Topographical Association.
Proceedings of the Royal Society	Royal Society.
Smithsonian Miscellaneous Collections Do. Contributions to Knowledge	Smithsonian Institution.
Memoirs of the Manchester Literary and Philosophical Society Proceedings do. (about fortnightly, Oct. to April	Manchester Literary and Philosophical Society.
Journal of the Royal Dublin Society (about once a year)	Royal Dublin Society.
Proceedings of the Royal Institution (2 pts. a year)	Royal Institution of Great Britain and Ireland.
Proceedings of the Zoological Society (3 pts. a year—May, Oct., March)	Zoological Society.
Journal of the Architectural, Archæological, and Historic Society of Chester	Architectural, Archæological, and Historic Society of Chester.
Edinburgh Astronomical Observations	Royal Observatory, Edinburgh.

Transactions of the American Philosophical Society Proceedings do. (several pts. a year)	American Philosophical Society.
Abridgements of Specifications of Patents, with Indices	Commissioner of Patents.
Transactions of the Academy of Sciences of St. Louis	The Academy of Sciences of St. Louis, U. S.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger.....	Royal Danish Society of Sciences.
Proceedings of the Royal Irish Academy...	Royal Irish Academy.
Journal of the Royal Geological Society of Ireland.....	Royal Geological Society of Ireland.
Transactions of the Manchester Geological Society	Manchester Geological Society.

LIST OF OFFICERS AND COUNCIL,

1874-5

OFFICERS

PRESIDENT	J. I. IKIN, F.R.C.S.
VICE-PRESIDENTS	J. D. HEATON, M.D., F.R.C.P. REV. J. H. McCHEANE, M.A.
TREASURER	HENRY OXLEY.
HONORARY SECRETARIES	THOMAS WILSON, M.A. RICHARD REYNOLDS, F.C.S.
HONORARY CURATOR IN GEOLOGY	EDWARD FILLITER, C.E., F.G.S.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. T. CLIFFORD ALLBUTT, M.D., F.L.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN	J. D. HEATON, M.D., F.R.C.P.

The above officers, with the following gentlemen, comprise the

COUNCIL

WALTER BAILY, M.A.

REV. J. E. CARPENTER, M.A.

CHARLES CHADWICK, M.D., D.C.L., F.R.C.P.

J. RAWLINSON FORD.

REV. JOHN GOTT, D.D.

F. M. LUPTON, M.A.

JOHN MARSHALL, M.A.

W. NICHOLSON PRICE.

T. W. STANSFELD.

W. SYKES WARD, F.C.S.

General Curator and Assistant Secretary	LOUIS C. MIALL.
Curator's Assistant	C. J. CLARKE.

LIST OF MEMBERS AND SUBSCRIBERS,

1873-4

* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

Aldam, W.	Frickley Hall, Doncaster.
Armitage, William James	Farnley.
Arthington, Robert	73, Hunslet Road.
Atkinson, John William	Woodhouse Square.
Baines, Edward	St. Ann's Hill, Burley, near Leeds.
Barran, John	Chapel-Allerton Hall.
Battye, James C.	Yeadon.
*Beckett, William.	
Bilbrough, Alfred	15, Beech Grove Terrace.
Binks, Benjamin, Jun.	York Place.
Broadhead, Henry	Chapel-Allerton.
Brown, James (2 shares)	Rossington, Doncaster.
Brown, Samuel James (2 shares)	Loftus Hill, near Knaresborough.
Burton, Miss	Roundhay.
Calverley, Edmund (2 shares)	Oulton Hall.
Charlesworth, C. H.	Settle.
Chorley, Henry	Park Square.
Clapham, Samuel	19, Cookridge Street.
Coghlan, William	Oak Villa, Grosvenor Road.
Cudworth, John W.	52, Mount Preston.
Denison, William Beckett	Meanwood Park.
Dibb, Thomas Townend	Little Woodhouse.
Eddison, John Edwin, M.D.	29, Park Square.
Ellershaw, John	Oakfield, Kirkstall.
Ellershaw, Walter	3, Cromer Terrace.
Empson, Christopher	Bramhope Hall.
Ford, Robert Lawson	Adel Grange.

George, Thomas Willington . .	Chapeltown.
Goodman, Benjamin . . .	Gledhow House.
Gott, Rev. John, D.D. (2 shares) .	Woodsley House.
Gott, William Ewart (3 shares) .	Armley House.
Greenhow, Thomas Michael, M.D.	Newton Hall.
Harding, T. R.	St. Ann's Tower, Headingley.
Heaps, John William . . .	Terrace House, Chapeltown Road.
Heaps, Charles Denison . .	Woodhouse Lodge, Woodhouse Lane.
Heaton, John Deakin, M.D., F.R.C.P.	Claremont, Leeds.
Hey, William, F.R.C.S. . .	Gledhow Wood.
Hirst, Joseph	Wharfedale Lawn, Wetherby.
Holdforth, Walter. . . .	Knaresborough.
Holt, Joseph	Wedderburn House, Harrogate.
Horsfall, John, F.R.C.S. . .	Albion Street.
Ingham, Constantine . . .	Clarendon Place.
Ingham, William	Belmont, Chorley Lane.
Jowitt, John	Harehills Grove, Potternewton, near Leeds.
Joy, William Glover . . .	Headingley.
Kinnear, Thomas John, M.A. .	Horsforth Hall.
Latimer, John	St. Mark's Villas, Woodhouse Lane.
Luccock, John Darnton. . .	54, North Street.
Lupton, Francis	Beechwood, Roundhay.
Lupton, Sydney	Harehills, Potternewton.
Makins, Charles	17, Craven's Hill, Regent's Park, London, N.W.
Marshall, Edmond Henry . .	Weetwood Hall.
Marshall, Henry Cowper . .	Do.
Marshall, Arthur, F.G.S. . .	Headingley House.
*Marshall, J. G., F.G.S. (2 shares) .	
Marshall, Victor Alexander Ernest, B.A.	Headingley House.
Marshall, R. D.	Cookridge Hall.
Nunneley, J. A., M.B. . . .	22, Park Place.
*Rhodes, Rev. J. Armitage, M.A. .	
Rhodes, John	Potternewton House.
Shepherd, John	Allenby House, Tadcaster.

*Smith, John Metcalfe . . .	
Smith, Henry Stooks . . .	Headingley.
Tatham, George	Springfield Mount.
Teale, Thomas Greenwood . .	Bentley House, Meanwood.
Teale, Mrs.	St. James' Lodge.
Tottie, John William . . .	Coniston Hall, Bell Busk, nr. Skipton.
Waite, James Butler . . .	Belvidere House, New Leeds.
Walker, Edward	15, Springfield Mount.
Ward, William Sykes, F.C.S. . .	Denison Hall, Hanover Square.
Whiteley, William	Butt's Cottage, Armley.
*Wilson, Richard Basset.	

NEW PROPRIETARY MEMBERS.

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

Atkinson, Daniel Hopkin . .	16, Brunswick Place.
Atkinson, Edward, F.L.S., F.Z.S. .	2, Albion Place.
Baines, Frederick	Weetwood.
Balme, E. B. Wheatley . . .	Cote Wall, Mirfield.
*Beckett, William (8 shares).	
Bilbrough, Joseph Brooks . .	15, Beech Grove Terrace.
Birchall, Edward	7, Park Square.
Boothroyd, W.	Grove Hill, Headingley.
Brown, William (2 shares) . .	Bardon Grange, Weetwood.
Buckton, George	Roundhay.
Buckton, Joshua	Broomhill, Moor-Allerton.
Burkill, Isaac Henry . . .	Allerton Hall, Chapeltown.
Butler, J. O.	Abbey House, Kirkstall.
Chadwick, Charles, M.D., D.C.L., F.R.C.P.	35, Park Square.
Chadwick, William . . .	Arksey, Doncaster.
Cliff, Joseph	Wortley.
Connor, Mrs.	Gledhow Hall.
Conyers, W. H.	Ilkley.
*Cooper, John (2 shares).	
Craven, Joseph	Clifton House, Beeston Hill.
Crofts, John	Adel.
Curwood, Capel Augustus . .	De Grey Terrace.

Donisthorpe, G. E.	Harrogate.
Ely, The Lord Bishop of	The Palace, Ely.
Fairbairn, Sir Andrew, M.A.	Goldsborough Hall, Knaresborough.
Farrer, James	Ingleborough House, Clapham, near Lancaster.
Ferguson, William	25, Albion Street.
Filliter, Edward, M.Inst., C.E., F.G.S.	West Mount House, Clarendon Road.
*Gott, John (10 shares).	
Hall, Thomas	Heath Cottage, Moor-Allerton.
Hargrave, James	Willaston House, Harrogate.
*Hargreaves, S. B.	
Harvey, William	Bellevue Terrace.
Henderson, Rev. W. G., D.C.L.	Grammar School.
Hey, Samuel, F.R.C.S.	1, Albion Place.
Holroyd, James	Gledhow.
Howarth, Rev. William Lee	Elmwood House.
Hudson, Henry	Oakwood, Roundhay.
Hudson, Robert John	Burley-in-Wharfedale.
Ingham, Charles Alfred.	Belmont, Chorley Lane.
Ingham, Henry Constantine	Lyddon Terrace.
Jowitt, Robert Benson	Elmhurst, Potternewton.
Joy, Walker	3½, Queen Square.
Kennedy, Thomas Stewart	Meanwood.
Kitson, James	Elmete Hall, Roundhay.
Kitson, J. Hawthorne	Hyde Terrace.
Kitson, James, Jun.	Headingley.
Kitson, Frederick William	Burley, near Leeds.
Latchmore, Edward	4, Ridge Mount, Cliff Road.
Leather, J. T.	Leventhorpe Hall.
Ludolf, Henry	Headingley Lane.
Lupton, Arthur	Headingley.
Lupton, Joseph	Chapel-Allerton.
Lupton, John	Moorlands, Headingley.
Lupton, Darnton	Harehills, Potternewton.
Lupton, Francis Martineau, M.A.	Wellington Street.
March, Joseph Ogden	Beech Grove House, Woodhouse Lane.

Margerison, J. L.	4, Porchester Gate, Bayswater Road, London.
Marsden, H. R.	Avenue House, Woodhouse Lane.
Marshall, Thomas, M.A. . .	Highfield, Chapel-Allerton.
Marshall, John, M.A. . . .	Bentley Lodge, Meanwood.
Marshall, Stephen Albert . .	Weetwood.
Maude, Edmund	Middleton Lodge, Beeston.
Meggeson, George . . .	6, Cromer Terrace.
Milner, Henry W. B. . . .	Kirkstall Grange.
Nickols, Richard	Bramley.
*Nicholson, Mrs., Roundhay (2 shares).	
Nunneley, A. G.	9, Beech Grove.
Oxley, Henry	Weetwood Villa, Weetwood Road, Far Headingley.
Passavant, P. W.	De la Haye House, Chapeltown Rd.
Price, William Nicholson . .	7, East Parade.
Prichard, W.	Bishopgate Street.
Reynolds, Richard, F.C.S. . .	Cliff Lodge, Hyde Park.
Sagar-Musgrave, J. . . .	Red Hall, Shadwell.
Schunck, Edward	Adel.
Stansfeld, T. W. (2 shares) . .	Weetwood Grove.
Stewart, G. M.	43, Hillary Street.
Taylor, George	Buckingham House, Headingley.
*Taylor, Samuel.	
Teale, T. Pridgin, M.A., F.R.C.S.	North Grange, Headingley.
Teasdale, Washington . . .	Rosehurst, Headingley.
Tennant, Robert, M.P. . .	Scarcroft Lodge, Shadwell.
Tennant, Thomas . . .	21, Blenheim Terrace.
Tetley, F. W.	Foxhill, Weetwood.
Turner, Richard Bickerton . .	Bank of England, South Parade.
Wailes, William	Harrogate.
Watson, William	Elmwood, Harrogate.
Whitaker, John (2 shares) . .	Messrs. Brown & Co., Commercial St.
Whiting, John	Regent Villas, Headingley.
Wicksteed, Joseph Hartley . .	3, Eldon Terrace, Woodhouse Lane.
Wilson, John	Seacroft.
Wilson, Thomas, M.A. . .	3, Hillary Place.
Wood, Richard	Newton Villa, Potternewton.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

Armistead, Joseph John	Chapeltown.
Atkinson, J. H.	14, East Parade.
*Bloome, Matthew.	
Bowers, Rev. T. S., M.A.	Kirkstall.
Buckton, Joseph	Moorland Terrace.
Bulmer, John	4, Winfield Mount, Potternewton. Lane.
Cadman, William	Roundhay.
Garlick, William	6, Hyde Terrace.
Hewitt, E. W.	Harrogate.
Ikin, Joshua Ingham, F.R.C.S.	19, Park Place.
Martin, Samuel Dickinson	Beech Grove, Harrogate.
Ramskill, Josiah, M.R.C.S.	13, Meadow Lane.
Stratten, Rev. J. R.	Park Square.
Swaine, W. E.	Highfield House, Woodhouse Lane.
Sykes, Henry Marshall	Roundhay.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

Allbutt, T. Clifford, M.A., M.D., F.S.A., F.L.S.	Virginia Road.
Baily, Walter, M.A.	24, Hyde Terrace.
Baines, Edward Manwaring	6, Ashwood Terrace, Headingley Hill.
Barr, Frederick Horatio.	Mount View, Headingley Lane.
Barr, Mrs. Robert	Mount Pleasant.
Barwick, J. M.	Glen View, Shipley.
Benson, John	19, Albion Street.
Best, William	18, Lyddon Terrace.
Bolland, W. T.	Hunslet Lane.
Booth, Joseph	Grosvenor Road, Headingley Lane.
Botterill, John	Flower Bank, Burley.
Bousfield, Charles Edward	3, Beech Grove Terrace.
Briggs, Riley	Springfield Mount.
Carpenter, Rev. J. Estlin, M.A.	7, Lifton Place.

Carter, Robert Meek, M.P.	Woodhouse Lane.
Clay, George	8, Blenheim Square.
Corson, George	Far Headingley.
Dawson, Edwin	17, Blenheim Terrace.
Denny, T. G.	46, Burley Street.
Dixon, J. W.	13, Vernon Road.
Eddison, Frederick	The Manor, Adel.
Eddison, Robert William	Headingley.
Firth, William	Burley Wood House.
Ford, J. Rawlinson	Adel Grange.
Ford, T. B. P.	Ilkley.
Gascoigne, F. C. Trench	Parlington Park.
*Greenwood, Thomas.	
Hargrave, John	St. Ann's Lodge, Burley, near Leeds.
Hepper, John	Clareville, Headingley.
Holt, Henry Percy	Cavendish Road.
Holt, Joseph	Wedderburn House, Harrogate.
Horsman, Thomas, B.A.	3, High Royd, Belle Vue Road.
Illingworth, William	Headingley Cliff.
Ingham, Tom	Belmont, Chorley Lane.
Irwin, Edward	Preston House, Tonbridge Street.
Irwell, Julius	Highfield House, Headingley.
Jackson, Rev. Edward, M.A.	9, Brunswick Place, North Street.
*Jackson, William S.	
Kempe, Arthur	29, Brunswick Terrace.
Kemplay, Miss	St. John's Place.
Lambert, Joseph	Rose Court, Headingley Lane.
Lawson, Thomas	Potternewton.
Lawson, John	Beech Grove Hall.
Leather, J. W.	Newton Green, Chapeltown.
Ledgard, William	Eller Close, Roundhay.
Lupton, Joseph	Armley.
*Manning, John.	
McCheane, Rev. J. H., M.A.	Trinity Parsonage, Hyde Terrace.
March, George	Oaklands, Scarcroft.
Middleton, John William	Mount Terrace, Potternewton.
Morley, Herbert Ogle	20, Victoria Terrace.
Myers, William Beswick	Gristhorpe, near Filey.

Myers, W. C.	Grove House, Roundhay.
Nelson, Henry	St. John's Cottage, St. John's Road.
Nunneley, Thomas	10, Park Place.
Nussey, George Henry	St. Ann's Lane, Burley, near Leeds.
Nussey, Obadiah	Morley House, Headingley.
Nussey, Thomas	Virginia House, Headingley Hill.
Nussey, Samuel Leathley	Potternewton Hall.
Nussey, Peter	Spring Ville, Shaw Lane, Headingley.
*Payne, R. E.	
Ramsbotham, S. H., M.D.	16, Park Place.
Raynar, John	37, Lyddon Terrace.
Read, Miss	Chapel-Allerton.
Riley, Thomas	7, Blenheim Square.
Robinson, Richard	Ousthorpe Villa, Clarendon Road.
Robinson, R. H.	Kirkstall Hall.
Sharpe, Miss	21, Victoria Place, Camp Road.
*Simpson, R. W.	
Smith, John Edward	Park Villas, Potternewton.
Smith, William Farrar	Hope Villa, Woodhouse Lane.
Somers, Francis	Fountain Terrace.
Stables, James	Horsforth.
*Talbot, George.	
Temple, Rev. Henry, M.A.	St. John's Vicarage, Woodhouse Lane.
*Tennant, Joseph Mason.	
Titley, Anthony	Manor House, Victoria Grove, Headingley.
Titley, T. A.	Gledhow.
Tottie, J. W.	Coniston Hall, Bell Busk, nr. Skipton.
Townsley, Richard	6, Springfield Mount.
*Wade, John.	
*Walker, Thomas (Headingley Hill).	
Whiteley, Thomas	Blenheim Square.
Young, John	Moor Hill Farm, Headingley.

ANNUAL SUBSCRIBERS OF ONE GUINEA

Allen, H. R.	9, Hanover Street.
Ambler, T.	9, Park Place.
Appleton, Henry	Adel Lodge.

Armistead, Edwin	Albion Street.
Asquith, John Robert	Bond Place.
Asquith, J. W.	
Atkinson, Miss	Clarendon Road.
Atkinson, J. T.	Selby.
Atkinson, Tindal	Pease's Buildings, South Parade.
Atkinson, Law	Clarendon Road.
Baines, J. W.	Oatlands, Burley.
Barran, Charles	Chapel-Allerton Hall.
Barran, John, Jun.	5, Cromer Terrace.
Bartholomew, W. H., C.E.	Albion Villas, New Leeds.
Bedford, James	Woodhouse Cliff.
Beverley, Mrs.	Grosvenor Terrace, Headingley.
Beverley, Robert	Woodsley Terrace.
Beverley, W. A.	17, St. John's Terrace.
Bickerdike, Rev. John, M.A.	St. Mary's Vicarage, Beckett Street, Burmantofts.
Birchall, Oswald	Kirkstall Grove.
Braithwaite, James, M.D.	Clarendon Road.
Braithwaite, Richard Hale	Do.
Briscall, Henry	Springfield Mount.
Browne, J. C.	48, Briggate.
Bruce, William	Moorland Terrace.
Buckley, J. C.	10, Blenheim Terrace.
Buckton, Richard	Cumberland Lodge, Headingley Hill.
Bulmer, Charles	Blenheim Lodge.
Bulmer, Clifford Charles	Do.
Burton, F. H.	Newtown Works.
Butler, Edmund	Riseholme, Horsforth.
Calvert, John P.	6, Springfield Place.
Campbell, Archibald	23, Hyde Terrace.
Carter, George	17, Green Mount Street, Beeston Hill.
Chadwick, W.	Merton Villa, Cardigan Road.
Champion, John	10, Springfield Place.
Chatwin, E. W.	1, Willow Grove Road.
Cheetham, W.	Woodbottom Cottage, Horsforth.
Clare, W., M.D.	Park Square.

Clark, Miss	S. L. Nussey, Esq., Potternewton Hall.
Clay, J. W.	16, Warwick Place.
Coates, James Irwin, F.R.A.S.	Southend, Headingley.
Conyers, Joseph	Castle Grove, Headingley.
Cooke, William	Moorfield House, Moor-Allerton.
Cooper, G. I.	Woodhouse Chemical Works.
Craig, Robert	98, Briggate.
Crampton, W. T.	Woodland View, Chapeltown.
Crawford, James	Chapel-Allerton.
Crawford, Emmerson	Messrs. Beckett & Co., Park Row.
Crawford, J. W.	Newton Lane.
Crosley, William	33, Mount Preston.
Crossley, Louis John	Halifax.
Croysdale, John	8, Brunswick Street.
Cuthbert, John	163, Woodhouse Lane.
Davids, T. W. Rhys	9, Richmond Road, Headingley.
Davis, Arthur Sladen, M.A.	Grammar School.
Davis, Edward	Milton Lodge, Far Headingley.
Dawson, William	Larchfield Mills, Hunslet Lane.
Denby, Alfred	West Hill, New Leeds.
Dixon, Robert Henry	25, Virginia Road.
Dixon, Henry	6, De Grey Road.
Dolan, John Cass	North Hill Road, Headingley.
Douglas, Dr.	7, South Parade.
Douglas, John	Beech Grove, Oulton.
Dufton, Arthur Wellesley	74, Springfield Place.
Eddison, John, C.E.	1, Osborne Terrace, Virginia Road.
Emsley, G. A.	Clarendon Mount.
Faber, A. de D.	3, Wesley Place, Headingley.
Fairley, Thomas, F.C.S.	East Parade.
Falcon, Thomas	Pudsey.
Farrar, Abraham, Jun.	115, Hyde Park Road.
Fenwick, Thomas	Allerton Hill, Chapel-Allerton.
Ferns, Francis	Cliff Road.
Foster, A. S.	Garforth.
Foster, Samuel	2, Aked's Terrace, Woodhouse Moor.
Fox, James, C.E.	Woodlands, Horsforth.

Fraser, John	Grove House, Headingley.
Gamble, J. H.	Kendall Street.
Gaunt, Miss	4, Victoria Place, Camp Road.
Glover, F., B.A.	16, De Grey Road.
Glover, D. R.	Do.
Goodall, Charles	Francis Street, New Leeds.
Granger, C.	Newton Grove, Chapeltown Road.
Greene, John	Whinmoor, near Seacroft.
Greenwood, F.	School of Medicine, Park Street.
Greenwood, W. F.	Park Villas, Hyde Park Road.
Haigh, Rev. C. D., M.A.	3, Woodsley Terrace.
Hall, Frederick	North Street.
Hall, William	1, Hillary Place.
Hallilay, John	Burley Road.
Hamilton, R. W.	Cardigan Villas, Shaw Lane, Headingley.
Hammond, Thomas, Jun.	Hanover Square.
Handcock, George	5, Leopold Mount, Chapeltown Road.
Harding, T. W.	Hillary Lodge, Cavendish Road.
Hargrave, Charles	Oxley Hill, Moortown.
Harrison, Rev. F. L.	Vicarage, Burley.
Harvey, Thomas	Ashwood, Headingley Hill.
Hassé, A. B.	31, Commercial Street.
Headland, Thos., Jun.	49, Briggate.
Heald, Alfred William	8, Springfield Mount.
Hebblethwaite, A. R.	12, Blenheim Terrace.
Hewetson, Henry	St. John's Terrace.
Hezmalhalch, Joseph	Thorner.
Hiley, Rev. R. W.	Thorparch Grange, Tadcaster.
Hill, John William, M.A.	Lynton Villa, Mount Preston.
Hill, M. S.	30, Mount Preston.
Hindle, J. E.	Bramhope.
Hirst, J. A.	Hyde Lodge, St. John's Hill.
Hobson, Frederick	49, Briggate.
Hodgson, J. P.	10, De Grey Terrace.
Holmes, John	Methley.
Holmes, Joseph	92, Meadow Lane.

Holt, Edward	The Manor House, Farnley.
Hudson, Walter	Grey Stone House, Adwalton.
Huggon, William, F.C.S.	50, Springfield Place.
Hurd, Samuel	Leopold Mount, Chapeltown Road.
Irwin, George	30, Albion Street.
Jackson, G. W.	5, Park Place.
Jackson, William Thomas	Headingley Hill.
Jefferson, William Lonsdale	15, York Place.
Jefferson, S., F.C.S.	17, Virginia Road.
Jepson, E. G.	8, Woodsley Terrace.
Jessop, T. R., F.R.C.S.	32, Park Square.
Jowitt, Miss	5, Newton Grove, New Leeds.
Joy, Lomas	Ridge House, Kingston Grove, Woodhouse Lane.
Kirkby, Thomas	8, Beech Grove Terrace.
Kirkby, Frederick	3, Springfield Mount.
Kirk, James	Killingbeck Hall.
Knight, J. C.	Queen's Place, Chapel-Allerton.
Knott, Joseph	Aire and Calder Navigation Co., Dock Street.
Land, R. T.	Leopold Street, New Leeds.
Lawson, Arthur T.	Beech Grove.
Leadman, Alexander	St. Ives, Headingley.
Lee, W.	8, Samuel Street, Camp Road.
Legard, Albert G.	5, Montpelier Terrace.
Lemprière, Capt.	1, Park Lane.
Leprince, A.	Brandon Terrace, Chapeltown Road.
Loe, James S.	147, Woodhouse Lane.
Lupton, Arthur G.	Beechwood, Roundhay.
Lupton, Edward Arthur	4, Blenheim Terrace.
Lupton, Henry	The Elms, Chapel-Allerton.
Lupton, William W.	Newton Hill.
Marshall, W. E.	1, Beech Grove Terrace.
Matterson, Miss	8, Cavendish Road.
Maude, Miss	Knowsthorpe House.
Middleton, William	Gledhow Grange.

Moore, Major	3, Woodhouse Square.
Musgrave, Albert	Belle Vue Road.
Naylor, G. F.	Bond Street, Wakefield.
Naylor, J. W.	Allerton Hill, Chapeltown.
Newstead, J. S.	Beech Grove Terrace.
Nichols, J. H.	St. Mark's Villas, Woodhouse.
Odgers, Rev. J. C., B.A.	7, Mount Preston.
Paley, Miss	West View Terrace, Chapeltown.
Pawson, A. H.	Lawn's House, Farnley, near Leeds.
Pawson, John Edward	Do.
Pearson, John Thomas	Weetwood Road, Far Headingley.
Pettitt, Rev. John	Wortley Vicarage.
Pope, Edward	Farfield, Moor-Allerton.
Pope, R.	Clarendon House.
Powell, William	13, Park Place.
Ralph, John	8, Brunswick Place, North Street.
Rayner, George	Hyde Gardens, Clarendon Road.
Rayner, John	17, Vernon Road.
Redmayne, John	Chapeltown.
Reffitt, J. W.	Hanover Street.
Reynolds, Freshfield	13, Briggate.
Richards, F. S., U.S. Consul	St. John's Grove, Moorland Road.
Richardson, Rev. E. A.	30, Cliff Road.
Rider, James	4, High Royd, Belle Vue Road.
Robinson, Alfred	49, Lofthouse Place.
Robinson, Frederick	14, Mount Preston.
Robinson, Thomas	Castleton Lodge, Armley.
Rooke, Charles S.	Newton Hill, Potternewton.
Rooke, R. L.	Do.
Rowley, Walter, F.G.S.	Headingley.
Rushworth, C. W.	Hillary Mount, Woodhouse Lane.
Ryder, Charles	Regent Villas, Headingley.
Salt, George	Saltaire, near Bradford.
Scattergood, Thomas	41, Park Square.
Seaton, James	Wintoun House, North Street.
Shackleton, Joseph	Wortley.
Smith, Edward James	Grosvenor Terrace, Headingley.

Smith, Samuel	Beechwood, Bramley.
Smith, Stephen Ernest	Richmond Road, Headingley.
Smith, John Wales	2, Gordon Villas, Woodhouse Lane.
Smith, S. M.	Calverley House.
Smith, Mrs. Henry	Highfield, Headingley.
Snowdon, Henry	12, Claypit Lane.
Snowdon, Rev. R. K.	Chapel-Allerton.
Stables, Ashley	Horsforth.
Stables, Henry	Do.
Style, Rev. G., M.A.	Giggleswick Grammar School.
Simpson, Frank E.	Springfield Mount.
Swaine, John	North Hill Road, Headingley Hill.
Stringer, J. W.	81, Hyde Park Road.
Sykes, Alfred W.	Cookridge.
Thompson, Vincent T.	High Royd, Belle Vue Road.
Thoms, G. E.	Aire and Calder Navigation Company, Dock Street.
Thorne, H. A.	14, Cobourg Street.
Thorp, W. H.	Broomfield, Chapel Lane, Headingley.
Tiffany, George John	17, Grove Terrace.
Todd, William	Blundell Place.
Tootal, Miss	St. Mary's Mount.
Topham, John	Newton Lodge, Potternewton.
Trumble, H. G.	Basinghall Street.
Turner, Joseph	Spencer Place, New Leeds.
Turton, William	31, Victoria Terrace.
Wailes, Francis	2, Linton Terrace.
Walker, William	Hanover Square.
Walker, Leasowe	Brunswick Place.
Walker, James	5, High Royd, Belle Vue Road.
Walker, George	Newton Hill.
Walker, F. H.	32, Fenton Street.
Walker, A. T.	Newton Grove.
Walker, Henry	Oak House, Headingley.

Walley, Joseph	14, Eldon Terrace.
Ward, William	Manor House, Churwell.
Ward, William, Jun.	Denison Hall, Hanover Square.
Wardle, C. W.	Whitkirk.
Watson, Charles	Woodhouse Lane.
Webb, J. P.	Cardigan House, Headingley.
Wesley, John S.	Wetherby.
Wheelhouse, W. St. J., M.P.	14, Queen Street.
Wheelhouse, C. G., F.R.C.S.	Hillary Place.
Williams, Rev. C. Harley Drummond	St. Luke's Vicarage, North Street.
Willett, Ernest H.	Arnold House, Brighton.
Willson, J. J.	3, Newton Grove, New Leeds.
Wilson, Edmund	4, Osborne Terrace, Beech Grove.
Wood, Robert Henry	Springville, Horsforth.
Wood, Rev. Frederick J., M.A.	Priory, Camp Road.
Wood, Frederick	18, Hyde Terrace.
Wright, Howard	Phœnix Cottage, Chapel-Allerton.
Wright, Charles James, M.R.C.S.	4, Park Square.
Yewdall, John Cliff	Oaklands, Calverley.
Yewdall, David	Calverley Grange.
Yewdall, Edwin	40, Wade Lane.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE

Armistead, Mrs.	E. Armistead, Albion Street.
Asquith, Mrs. J. W.	Stony Royd, Headingley.
Asquith, Mrs.	Do.
Atkinson, Miss Eleanor	Clarendon Road.
Atkinson, Miss Emily	Do.
Atkinson, Miss M. E.	Woodhouse Square.
Baily, Mrs.	24, Hyde Terrace.
Baines, Mrs. T.	Chapel-Allerton.
Baines, Mrs. J. W.	Oatlands, Burley.
Barran, Mrs.	Chapel-Allerton Hall.

Barran, Mrs., Jun.	5, Cromer Terrace.
Bedford, Mrs.	Woodhouse Cliff.
Best, Miss Mary	18, Lyddon Terrace.
Beverley, Mrs. R.	Woodsley Terrace.
Beverley, W. H.	Do.
Beverley, Miss	Do.
Beverley, Arthur	3, Grosvenor Terrace, Headingley.
Beverley, Miss	Do.
Beverley, Mrs. W. A.	St. John's Terrace.
Birchall, Mrs.	Kirkstall Grove.
Birchall, Mrs. Edwin	Do.
Birchall, Miss D. F.	Do.
Braithwaite, Miss	Clarendon Road.
Briscall, Mrs.	Springfield Mount.
Bruce, Mrs.	Moorland Terrace.
Buckley, Miss	Blenheim Terrace.
Buckley, Miss Amelia	Do.
Buckton, Mrs. R.	Cumberland Lodge, Headingley.
Buckton, Walter	Moorland Terrace.
Buckton, Miss	Do.
Bulmer, Mrs. C.	Blenheim Lodge.
Bulmer, Miss Ada	Do.
Burton, Miss	Newtown Works.
Butler, Mrs. Edmund	Riseholme, Horsforth.
Butler, Mrs. A.	Kepstorn, near Leeds.
Butler, Miss	Do.
Butler, Hugh	Do.
Byles, Mrs. A. Holden	9, Richmond Road, Headingley.
Campbell, Mrs.	20, Hyde Terrace.
Chadwick, Mrs. W.	Merton Villa, Cardigan Road.
Chadwick, Miss	35, Park Square.
Chadwick, Miss Amy	Do.
Charlesworth, Miss F. M.	17, Hanover Square.
Cheetham, Miss E.	Woodbottom Cottage, Horsforth, near Leeds.
Clare, Mrs.	Park Square.
Clare, Miss	Do.

Cooke, Mrs.	Moorfield House, Moor-Allerton, near Leeds.
Crawford, Mrs. E. W.	Messrs. Beckett & Co., Park Row.
Crawford, Miss	Do. do.
Crawford, Mrs. J. W.	Newton Lane.
Davis, Mrs. E.	Milton Lodge, Far Headingley.
Denby, Mrs.	Chapeltown.
Denby, Miss	Do.
Dixon, Mrs. R. H.	25, Virginia Road.
Dixon, George Edward	6, De Grey Road.
Dixon, Miss	Do.
Dixon, Miss M. E.	Do.
Dobson, Miss	Grove House, Roundhay.
Douglas, Mrs.	Beech Grove, Oulton.
Emsley, Mrs. G. A.	Clarendon Mount.
Falcon, Mrs.	Pudsey, near Leeds.
Farrar, Mrs., Jun.	115, Hyde Park Road.
Fenwick, Mrs.	Allerton Hill, Chapeltown.
Ferns, Mrs.	Cliff Road.
Foster, Mrs.	2, Aked's Terrace, Woodhouse Moor.
Fraser, Mrs.	Grove House, Headingley.
Fraser, H. S.	Do. do.
Fraser, Miss	Do. do.
Garlick, Miss	6, Hyde Terrace.
Glover, Mrs.	16, De Grey Road.
Glover, Miss	Do.
Glover, Miss H.	Do.
Granger, Mrs	Newton Grove, Chapeltown Road.
Granger, Farrington	Do. do
Granger, Miss	Do. do.
Granger, Miss Mary	Do. do.
Greene, Mrs.	Whinmoor, near Seacroft
Greene, Miss	Do. do.
Greenwood, Miss	Park Villas, Hyde Park Road.
Haigh, Arthur	6, Woodsley Terrace.
Haigh, Miss	Do.

Hall, Mrs. F.	North Street.
Hall, Mrs. W.	1, Hillary Place.
Hallilay, Mrs.	Burley Road.
Hamilton, Mrs.	Cardigan Villas, Shaw Lane, Headingley.
Hammond, Miss	Hanover Square.
Handcock, Mrs. G.	5, Leopold Mount, Chapeltown Road.
Harding, Mrs.	Hillary Lodge, Cavendish Road.
Hardy, Miss F.	Woodbottom Cottage, Horsforth.
Harrison, Mrs.	The Vicarage, Burley.
Harvey, Mrs. W.	St. John's Terrace.
Headland, Miss	49, Briggate.
Heaton, Miss Helen	Claremont.
Heaton, Miss Marian	Do.
Hill, Mrs. J. W.	Lynton Villa, Mount Preston.
Hirst, Mrs. J. A.	Hyde Lodge, St. John's Hill.
Hodgson, Mrs. J. P.	10, De Grey Terrace.
Holmes, Mrs. J.	Methley.
Holt, Mrs.	The Manor House, Farnley.
Hudson, Mrs.	Grey Stone House, Adwalton.
Irwin, Miss	Preston House, Tonbridge Street.
Irwin, Miss Hannah	Do. do.
Jackson, Mrs. W. T.	Headingley Hill.
Jepson, Mrs.	8, Woodsley Terrace.
Jessop, Mrs.	32, Park Square.
Jowitt, Miss E. M.	5, Newton Grove, New Leeds.
Jowitt, Miss F.	Harehills Grove, Potternewton.
Joy, Mrs. Lomas	Ridge House, Kingston Grove, Woodhouse Lane.
Kirkby, Herbert	3, Springfield Mount.
Kirkby, Miss	Do.
Kirkby, Miss Ada	Do.
Kirkby, Miss Eleanor	Do.
Kirkby, Harry	8, Beech Grove Terrace.
Knight, Miss L.	Queen's Place, Chapel-Allerton.
Lambert, Miss	Rose Court, Headingley Lane.

Lawson, F. W.	Beech Grove.
Lawson, Miss	Do.
Lawson, Miss M.	Do.
Lawson, Miss Kate	Do.
Leadman, Miss	St. Ives, Headingley.
Leadman, Miss O.	Do.
Ledgard, Miss	Eller Close, Roundhay.
Lee, Mrs. W.	8, Samuel Street, Camp Road.
Lemprière, Mrs.	1, Park Lane.
Lupton, Oliver	4, Blenheim Terrace.
Matterson, Miss E. A.	8, Cavendish Road.
Middleton, Mrs.	Gledhow Grange.
Middleton, Miss	Do.
Myers, Miss	Miss Matterson's, 8, Cavendish Road.
Myers, Miss	Grove House, Roundhay.
Myers, Miss Henrietta	Do. do.
Naylor, Mrs. J. W.	Allerton Hill, Chapeltown.
Naylor, Miss J. E.	Newton Lodge, Potternewton.
Nelson, C. J.	St. John's Cottage, St. John's Road.
Nelson, Herbert	Do. do.
Nelson, Miss M. E.	Do. do.
Nelson, Miss L.	Do. do.
Newstead, Mrs.	6, Beech Grove Terrace.
Passavant, William	De la Haye House, Chapeltown Road.
Passavant, Miss	Do. do.
Passavant, Miss Camilla	Do. do.
Passavant, Miss Fanny	Do. do.
Payne, E. S.	13, Briggate.
Pettitt, Mrs.	Wortley Vicarage.
Pope, Mrs. R.	Clarendon House.
Pope, Miss A. E.	Do.
Pope, Miss	Farfield, Moor-Allerton.
Rayner, Mrs. G.	Hyde Gardens, Clarendon Road.
Rayner, Miss	17, Vernon Road.
Rayner, Miss A.	Do.

Richardson, Mrs.	30, Cliff Road.
Rider, Mrs. J.	High Royd, Belle Vue Road.
Robinson, Mrs. Alfred	49, Lofthouse Place.
Robinson, Mrs.	Castleton Lodge, Armley.
Robinson, Miss	Do.
Rooke, Miss	Newton Hill, Potternewton.
Rooke, Miss E. M.	Do. do.
Rowley, Miss	Headingley.
Rushworth, Miss	Hillary Mount, Woodhouse Lane.
Rushworth, Miss Caroline	Do. do.
Ryder, Mrs. C.	Regent Villas, Headingley.
Scattergood, Mrs.	41, Park Square.
Seaton, Mrs.	Wintoun House, North Street.
Sharpe, Miss Ann	21, Victoria Place, Camp Road.
Smith, Mrs. S.	Beechwood, Bramley.
Stables, Miss	Horsforth.
Stables, Miss Lucy	Do.
Stansfeld, Miss	Weetwood Grove.
Stringer, Mrs.	81, Hyde Park Road.
Swaine, Mrs. John	North Hill Road, Headingley Hill.
Swaine, Miss Marian	Do. do.
Tatham, Miss G.	Springfield Mount.
Taylor, Mrs. S.	Hyde Terrace.
Thompson, Mrs. V.	High Royd, Belle Vue Road.
Thorp, Mrs. J. H.	Broomfield, Chapel Lane, Headingley.
Thorp, Miss E.	Do. do.
Tootal, Miss M.	St. Mary's Mount.
Townsley, Miss	Springfield Mount.
Turner, Mrs.	Spencer Place, New Leeds.
Wailes, Mrs.	2, Linton Terrace.
Wailes, F. H.	Do.
Walker, Henry H.	3, Newton Grove, New Leeds.
Walker, Mrs.	Oak House, Headingley.
Walker, Tom	Do. do.
Walker, Mrs. Leasowe	Brunswick Place.
Walker, Mrs. W.	Hanover Square.

Walker, Miss	Newton Grove.
Walley, Mrs.	14, Eldon Terrace.
Ward, Mrs.	Manor House, Churwell.
Ward, Alfred	Denison Hall, Hanover Square.
Ward, Edmund	Do. do.
Wardle, Mrs.	Whitkirk.
Webb, Mrs.	Cardigan House, Headingley.
Wheelhouse, Mrs. C. G. . .	Hillary Place.
Wheelhouse, Mrs. . . .	14, Queen Street.
Whiteley, Mrs.	Blenheim Square.
Williams, Mrs. Harley . . .	St. Luke's Vicarage, North Street.
Willson, Mrs. J. J. . . .	3, Newton Grove, New Leeds.
Wood, Mrs. F.	18, Hyde Terrace.
Wright, Miss	Phœnix Cottage, Chapel-Allerton.
Yewdall, Mrs. J. C. . . .	Oaklands, Calverley.
Yewdall, Miss	Do. do.

Members and Subscribers are requested to inform the Secretaries of any errors that may be found in the above list.

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W. Boyne, F.S.A., London.

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McCorquodale & Co., Printers, Bank Street, Leeds.

LEEDS

Philosophical & Literary Society.

THE ANNUAL REPORT.

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THE

FIFTY-FIFTH REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL & LITERARY

SOCIETY,

AT THE

CLOSE OF THE SESSION 1874-75.

Read at the Annual Meeting, May 4th, 1875.

LEEDS:
PRINTED AT THE OFFICE OF THE YORKSHIRE POST.

MDCCCLXXV.

IMPORTANT RULE

RESPECTING THE PROPERTY OF THE SOCIETY,

PASSED OCTOBER 8TH, 1860.

That in the event of a dissolution of this Society, its Property and Effects, whether real or personal, shall not be disposed of for the personal benefit of the Members, but shall be appropriated in such manner for the advancement of Science, Literature, or Art, in the town of Leeds, as shall be determined by a majority of the Members at an extraordinary Meeting to be convened for that purpose. But that no dissolution of the Society shall take place without the consent in writing, of a majority holding not less than two-thirds of the Proprietary Shares.

FORM OF A BEQUEST TO THE SOCIETY.

Every person desirous of bequeathing to the Society any sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form :—

I give and bequeath to the Trustees for the time being of the Society established at Leeds, called "THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY," *for the use of the said Society, the sum of , to be paid out of such part of my personal Estate as I may legally charge therewith.* [Or here enumerate the Effects or Property intended to be bequeathed]. *And I direct that the Receipt of the Treasurer of the said Society for the time being, shall be an effectual discharge to my Executors for the said Legacy.*

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

FIFTY-FIFTH SESSION.

The Council have again the satisfaction of reporting that the numerical strength of the Society continues to be well maintained. To facilitate accurate comparison in future years the present number of the different classes of Members is given in detail.

Original Proprietary Members (78 shares).....	71
New Proprietary Members (120 shares).....	97
Ordinary Members	12
New Ordinary Members	87
Annual Subscribers of £1 1s.	240
Annual Subscribers of 7s. 6d.	207
Total.....	714

In last year's report the total was 702.

The Council acknowledge with thanks a donation of £25 from H. R. Marsden, Esq., Mayor of Leeds; and a further donation of £10 from Thomas Emsley, Esq., of Burley-in-Wharfedale.

The following Lectures have been delivered before the Society during the past Session :—

1. "On the comparative advantages and the present position of Literary and Scientific Studies." The Very Rev. W. C. Lake, D.D., Dean of Durham. *Read Oct. 27th*, 1874.
2. "Palæozoic and Neozoic Corals." P. Martin Duncan, M.D., F.R.S., Professor of Geology, King's College, London. *Read Nov. 3rd*, 1874.

3. "The Approaching Transit of Venus." W. Huggins, D.C.L., LL.D., F.R.S. *Read Nov. 17th*, 1874.
4. "The Discovery of the Temple of Diana, and the other results of Excavations at Ephesus." J. T. Wood. *Read Nov. 24th*, 1874.
5. The Conversazione. *Held Dec. 1st*, 1874.
6. "The present Condition of Storm Warnings in the United Kingdom." R. H. Scott, M.A., F.R.S., Director of the Meteorological Office. *Read Dec. 15th*, 1874.
7. "Gautama Buddha; his Life and Teachings." T. W. Rhys Davids, late of the Ceylon Civil Service. *Read Jan. 5th*, 1875.
8. "Recent Developments of the Theory of Volcanic Phenomena." Professor A. H. Green, M.A. *Read Jan. 12th*, 1875.
9. "The Passage of Light through Optical Instruments." Walter Baily, M.A. *Read Jan. 19th*, 1875.
10. "Joan of Arc." J. C. Morison, M.A. *Read Feb. 2nd*, 1875.
11. "The Measurement of the Chemical Action of Sunlight." Professor T. E. Thorpe, Ph. D., F.R.S.E. *Read Feb. 9th*, 1875.
12. "Art and Literature in Egypt in the fourteenth century B.C." Rev. J. Estlin Carpenter, M.A. *Read Feb. 16th*, 1875.
13. "Soap Bubbles." Professor A. W. Rücker, M.A. *Read Mar. 2nd*, 1875.
14. "The Christian Antiquities of Ravenna." E. C. Clark, M.A., LL.M., Regius Professor of Civil Law, Cambridge. *Read Mar. 15th*, 1875.
15. "Coal and Coal Plants." Professor W. C. Williamson, F.R.S. *Read April 6th*, 1875.

Two short Courses of Lectures have been delivered by the Society's Curator, Mr. L. C. Miall, viz., six Lectures on "The Geology of the Neighbourhood of Leeds," in April and May, 1874, and two Lectures on "The Structure and Mode of Life of the Elephant," in February, 1875.

The Annual Conversazione was held on December 1st, and was well attended by the Members and Subscribers.

Wood engraving had been chosen as a subject for special illustration, and the kindness of many friends in Leeds and at a distance, rendered it possible to exhibit choice examples of the great masters in this art, Dürer, Wolgemuth, Burgmair, Holbein, and Bewick. So large and choice a collection of engravings by Bewick has never been assembled in Leeds. Besides many separate prints 42 volumes illustrated by this artist were shown. The modern practice of Wood Engraving was exemplified by drawings and photographs on wood, prepared blocks, engraved blocks, prints, engravers' tools, &c., lent by the proprietors of the *Graphic* newspaper, and the process of printing from wooden blocks was shown by Messrs. McCorquodale & Co. At the request of the council, Dr. Clifford Allbutt delivered a short address on the "History and Methods of Wood Engraving;" and at a later hour Prof. A. W. Rücker, M.A., of the Yorkshire College of Science, exhibited and described Mr. Crooke's "Experiments on Attraction and Repulsion by Radiation." A large collection of pictures and other works of art, of scientific curiosities and of novel industrial products, was distributed through the rooms.

It has become necessary to remind the Members and Subscribers that cards of invitation to the Conversazione, like admission tickets to the Society's Lectures, are not transferable, and are intended to admit only those whose names are written on the cards.

The Lecture Hall was cleaned and painted immediately before the opening of the session. At the same time the attention of the council was directed to the heating and ventilation of the room. Several experiments and alterations have been made with limited success. The

subject is still under consideration, and the council hope to be able materially to improve the atmosphere of the room.

During the last year an elementary Rock Collection, which has long been wanted to complete the geological department of the society's museum, has been formed and arranged. The rocks are divided into a local and a general series, and though time and additional space will be required to render the collection altogether adequate to the requirements of the student, it is already of educational value. A large proportion of the specimens have been collected within the year, and the council are indebted to Professor A. H. Green, M.A., of the Yorkshire College of Science, for important assistance in this work.

The general collection of Birds has been cleaned and rearranged. Many additional species have been named, chiefly by the Rev. Canon Tristram, whose kindness in undertaking work so difficult to any but a practised ornithologist the Council acknowledge. The descriptions of the various exotic species are scattered through innumerable works, many of them rare and costly, so that it has hitherto been impossible for provincial naturalists to name systematically a large and miscellaneous collection of foreign birds. The new descriptive catalogue of the birds in the British Museum, of which the first volume has lately been issued, will before many years have elapsed remove this difficulty. Throughout the collection—and the same remark applies to all departments of the museum which have been rearranged within the last three years—printed labels are substituted for the old manuscript labels.

The large and valuable collection of Mammalia is now undergoing revision, and the Primates, Cheiroptera,

Insectivora, and Rodentia have been cleaned and rearranged. The curator's assistant has arranged and partly renamed the Echinodermata, Polyzoa, Annelida, and Entozoa in the society's possession.

Another descriptive guide, illustrative of the collection of British Birds, has been issued during the last year. The sale of these publications, amounting to 803 copies for the year, gives the best proof of their usefulness. 43,901 persons have been admitted by payment to the museum during the year 1874-5. This is the largest number recorded in one year, except in 1872-3, when the receipts slightly exceeded the present amount.

Among the additions to the museum during the session now ended the following require special mention :—The society is indebted to the Earl of Enniskillen for a fine collection of fish remains from the mountain limestone of Armagh, and to Mr. John Harker of Richmond, for an important series of rare mountain limestone fossils, chiefly fish remains, from the neighbourhood of Richmond. The Raygill excavation, mentioned in the report of last year, has since yielded interesting fragments of *Hippopotamus*, *Elephas antiquus*, *Rhinoceros hemitæchus*, *Bos primigenius and Hyæna spelæa*. By the kindness of Mr. E. G. Spencer, of Lothersdale, these important relics have found a place in the society's museum. A collection of mammalian remains from the forest-bed of Cromer, which has hitherto been unrepresented in our palæontological series, has been contributed by Mr. R. H. Tiddeman, M.A., of the Geological Survey, whom we have also to thank for a collection of fossils from the Wealden of Hastings. We have to thank the Zoological Society for a fine specimen of the Tinamou

(*Tinamus Tao*, Tem.), the skeleton of which will shortly be added to the collection. This interesting form has long been a desideratum. The society has acquired, by purchase, a small but interesting collection of Roman antiquities found in the excavation for the North-Eastern Railway at York; a series of casts of the cranial cavities of Mammalia, issued by the Royal College of Surgeons; an example of the very curious pigeon, *Didunculus strigirostris*, from Samoa; and an adult of the *Apteryx australis*, from the Zoological Gardens.

The collections in nearly every department have outgrown the space at disposal. This is particularly the case with the Mammalia. It is impossible to display satisfactorily the specimens already acquired, and fresh additions can only be made at some disadvantage to the objects already placed. The Council have under consideration a plan for enlarging the Natural History Department by fitting up a gallery above the wall-cases in the large zoological room. Much additional accommodation would be gained thereby, without encroaching upon the free space of the room or interfering with the light.

In December last, a young female elephant, which had died in a travelling menagerie at Bradford, was purchased by the council for the purpose of dissection. It is not to be expected that the society's collection will be materially enriched from this source, but additional information will be obtained respecting the structure of an animal which, from its bulk and the supposed impossibility of preserving it from putrefaction, has never yet been examined with proper care. The dissection is still in progress, and has yielded several interesting results. The curator, Mr. L. C. Miall, has received

important assistance in this work from Mr. F. Greenwood, a member of the society and curator to the Leeds School of Medicine. To comparative anatomists the structure of this animal has always been an object of great interest, and has secured special study from John Hunter, Cuvier, Camper, and other eminent naturalists; but their investigations and dissections were partial, consequently your council were glad to afford Mr. Miall the opportunity of prosecuting the dissection and illustrating various peculiarities in its textures. This he has done with the utmost perseverance and with much credit to himself. Certain anatomical peculiarities which he has noted will be communicated through one of the scientific journals.

The Council are sure that all members of the society will share in their feeling of satisfaction at the honour recently conferred upon the society's curator, Mr. Miall, to whom the Geological Society of London has presented the balance of the Wollaston Fund, a grant made for the encouragement of research.

We record with great satisfaction the founding of an institution which promises to do much for scientific education in this town and district. The Yorkshire College of Science was opened in October last, and has actively prosecuted its work through the winter. Systematic instruction in mathematics, physics, chemistry, and geology, of a kind hitherto unattainable in Yorkshire, is now readily accessible to all. The consolidation and extension of the College of Science will promote in the surest and most rapid manner those studies which this society endeavours to cultivate. We may expect before long to include among our members a number of trained investigators;

the resources of the society, particularly the museum and library, will be more largely utilised; and scientific research, which so far as Leeds is concerned has long seemed to be on the verge of extinction, may be re-awakened. The present report shows that more direct benefits are already received by this society from the college staff. We have been favoured with three lectures from the professors, and the attractiveness of the conversazione was increased by their friendly assistance while the geological collection has been enriched from the collections of the Professor of Geology.

Under the auspices of the Local Committee for University Extension four courses of lectures and classes have been conducted during the past winter by lecturers from the University of Cambridge. Astronomy, physical geography, English constitutional history, and political economy have been taught in this way. The council have endeavoured to promote the important educational objects of the University Extension Committee by affording the use of the lecture hall at a reduced charge.

Four of our honorary members have been removed by death during the last year. Sir William Fairbairn and Dr. R. E. Grant belonged to us as eminent men of science, who had on special occasions honoured the society by delivering addresses before it. Dr. P. O'Callaghan and Mr. W. Osburn were more closely connected with us as former officers and members of council. Mr. Osburn had served successively as member of council, honorary secretary, vice-president, and curator of antiquities for 20 years, when his removal from Leeds in 1843 compelled him to resign his membership. He was a laborious student of Egyptian antiquities. In 1828 he

published an elaborate account of the mummy and sarcophagus, still in the possession of the society. Dr. O'Callaghan joined the council in 1855, and was elected hon. secretary in 1857. He held that office until his departure from Leeds in 1864. The catalogues of donations to the museum, the notices of objects exhibited at the annual conversazione of the society, the lists of lectures and papers, all bear abundant evidence of Dr. O'Callaghan's untiring exertions for the benefit of this institution. The new interest awakened in the proceedings of the society by the lectures from men eminent in science and literature whom he induced to visit Leeds, led to a great increase in the number of members and subscribers, and ultimately to the enlargement of the building. When Dr. O'Callaghan first entered the society the impetus with which it had set out thirty-five years previously was nearly exhausted. Thanks to his enthusiasm and energy its original activity has been revived and extended, and fifty-five years after its inauguration the society is still flourishing and successfully accomplishing the purposes for which it was instituted—viz., the maintenance of a classified museum, and the diffusion of sound literature and scientific knowledge.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1874.

1874.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January	42·5 Fah.	29·771	1·544
February	39·4 ,,	29·815	1·199
March	44·9 ,,	29·962	1·667
April	51·1 ,,	29·685	1·334
May	50·1 ,,	29·832	0·950
June	58·9 ,,	29·947	0·504
July	65·1 ,,	29·795	2·544
August	60·1 ,,	29·681	1·794
September	57·4 ,,	29·675	1·869
October	50.1 ,,	29·624	2·168
November	42·4 ,,	29·779	2·671
December	32·8 ,,	29·630	2·639

The mean monthly temperature was 49·5°.

The mean monthly height of the barometer was 29·766 inches.

The total rainfall for the year was 20·883 inches.

The greatest degree of heat, as indicated by the thermometer in the sun, was 98° on July 19; the greatest in the shade was 90° on July 19; and minimum 11° on December 30.

The greatest barometric pressure was on March 6, being 30·697 inches, the temperature of the mercury being 55°; the least pressure was on November 29, being 28·430 inches, the temperature of the mercury being 45°.

The greatest fall of rain (during 24 hours) was on November 29, being 0·980 inches.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the mean level of the sea, 137 feet; height of the rain-gauge above the street, 46 feet.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

STATEMENT OF RECEIPTS AND EXPENSES FOR THE YEAR 1874-5.

RECEIPTS.	£	s.	d.	£	s.	d.
To Bankers' Balance	6	0	7			
,, Curator's Ditto...	32	6	6			
				38	7	1
,, 82 New Proprietary Members, at 21*s.*	86	2	0			
,, 69 New Ordinary Members, at 21*s.*...	72	9	0			
,, 12 Old Ordinary Members, at 42*s.* ...	25	4	0			
,, 203 Old Annual Subscribers, at 21*s.*	213	3	0			
,, 27 New Annual Subscribers, at 21*s.*	28	7	0			
,, 162 Old Annual Subscribers, at 7*s.* 6*d.*	60	15	0			
,, 31 New Annual Subscribers, at 7*s.* 6*d.*	11	12	6			
,, Arrears	12	12	0			
				510	4	6
,, Rents of Cellars	50	0	0			
,, Rents of Lecture Room	189	9	0			
				239	9	0
,, Receipts for the Museum	182	18	5			
,, Receipts for the Conversazione ...	15	15	0			
				198	13	5
,, Donation from H. R. Marsden, Esq.	25	0	0			
,, Donation from T. Emsley, Esq. ...	10	0	0			
				35	0	0
,, Sale of Catalogues and Descriptive Guides	3	6	11			
,, Sundries	0	0	5			
,, Sale of Shares	30	0	0			
				33	7	4
				£1055	1	4

DISBURSEMENTS.	£	s.	d.	£	s.	d.
By Repairs	89	4	11			
,, Taxes and Rates	4	15	7			
,, Insurance	14	15	9			
,, Coals	22	13	3			
,, Gas	25	2	6			
				156	12	0
,, Salaries—Curator's	250	0	0			
,, Assistant Curator's ...	50	7	2			
,, Porter's	74	10	6			
				374	17	8
,, Collections—Geological	14	9	2			
,, Zoological	17	1	7			
,, Archæological	3	5	6			
,, Library	23	19	9			
				58	16	0
,, Postages	18	8	11			
,, Printing and Advertising	61	6	7			
,, Lectures	81	5	0			
,, Conversazione	59	5	5			
,, Commission to Collector (two years)	25	14	9			
,, Bankers' Commission	2	12	0			
,, Sundries	53	13	4			
				302	6	0
,, Balances—Bankers'	149	8	10			
,, Curator's	13	0	10			
				162	9	8
				£1055	1	4

Examined and found correct,

FRAS. M. LUPTON,
JOHN MARSHALL, } AUDITORS.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY,

1874-5.

GEOLOGY AND MINERALOGY.

Clay Ironstone, from Coal Measures, with "cone-in-cone structure"	Mr. G. F. Naylor, Wakefield.
Baryta and Calcite, from veins in Raygill Quarry, Lothersdale	Mr. Walter Baily, M.A.
Paludina, from Wealden of Sandown Bay, Isle of Wight (6 examples).....	Rev. C. H. Middleton.
Polished Mountain Limestone Coral (Clisiophyllum), from Llandudno	Mr. H. Saville.
Specimen of Swedish Iron	Mr. Sydney Lupton, M.A.
Red Chalk from Speeton... ..... Seven Specimens of Terebratula semi globosa, from Red Chalk, Speeton.....	Prof. A. H. Green, M.A.
Placoid teeth, from the Carboniferous Limestone of Armagh, viz.:— Psammodus porosus (4 specimens) Psammodus rugosus Cochliodus sp. Chomatodus cinctus (3 specimens) Psephodus magnus Streblodus obliquus (2 specimens) Streblodus Colei (2 specimens) Pœcilodus Jonesii (3 specimens) Helodus planus Helodus didymus (2 specimens) Petalodus Hastingiæ (2 specimens) Petalodus sagittatus (2 specimens) Copodus cornutus (2 specimens)	The Earl of Enniskillen, Florence Court, Enniskillen.

A Second Collection of Precious Stones, &c., viz.: — Turquoise, Tourmaline, Ruby, Porphyry, Garnet, Blue Agate, Malachite, Jade, Cat's-eye, Sapphire, Opal in matrix, three Pearls, Emerald	The late P. O'Callaghan, D.C.L., LL.D.
Fossils from the Mountain Limestone of Richmond, Yorkshire, viz.:— Pristodus falcatus (5 specimens) Cladodus (4 specimens) Petalodus Hastingiæ (4 specimens) Ctenopetalus serratus (5 specimens) Pleurodus Helodus didymus, and four other species of fishes Serpularia parallela Diastopora megastoma Monticulipora tumida Zaphrentis (?)	Mr. John Harker, Richmond.
"Cone-in-cone" Ironstone, Marcasite, Pyrite, Towanite, Zinc Blende, and Quartz, from Harlech	Mr. G. F. Naylor, Wakefield.
Rock Specimens, viz.:— Liver Rock, Craigleith Porphyritic Dolerite Syenite, Ennerdale Do. Vale of St. John Amygdaloid and Fossil Stem from Carboniferous Volcanic Ash	Prof. A. H. Green, M.A.
Antholithes Pitcairniæ, from Beeston Band Ironstone	Mr. James Malt.
Specimens of Volcanic Ash (Auvergne), Iron Ores (Elba), Gneiss, &c.	Rev. Chas. Norcliffe, Petergate, York.
Elephant Remains and Antlers of Cervidæ from the Forest Bed, Cromer	Mr. R. H. Tiddeman, M.A., H. M. Geological Survey.
Vertebræ and Rib of Iguanodon, Teeth and Bones of Crocodilus, Teeth and Scales of Lepidotus from the Hastings Sand, Hastings	Mr. R. H. Tiddeman, M.A., H. M. Geological Survey.
Molar of Elephas antiquus (narrow-plaited variety), two Molars of Rhinoceros hemitœchus, Lower Incisor of Hippopotamus major, two Molars of Bos primigenius, three Molars of Hyæna spelæa, from fissure filled with Glacial Drift, Raygill, Lothersdale, near Skipton	Mr. E. G. Spencer, The Willows, Lothersdale.

Rock Specimens, viz.:— Six Specimens illustrating the metamorphism of Skiddaw Seven Specimens from Castlerigg Fell, Keswick, viz.:— Coarse Volcanic Ash. Volcanic Ash, highly altered and semi-crystalline. Interstratification of Fine and Coarse Volcanic Ash. Vesicular and Slaggy (?) Lava. Vesicular Lava (top of flow.) Do. (centre of flow.) Close Trap (middle of flow) ..... Dolerite, from Castle Hill, Keswick..... Two Specimens of Gypsum from Fairburn	Prof. A. H. Green, M.A.
Septarian Ironstone Nodule from Osmondthorpe	Mr. J. Eccles, Temple Newsam.
Specimens of Ammonites, Kimmeridge Clay " Coralline Oolite Modiola, Gt. Oolite Pleurotomaria, Oolite Iron Ore, California Apatite, Scotland	Mr. Sydney Lupton, M.A.

ZOOLOGY AND BOTANY.

Sword of Sword-fish	Mr. James Lee.
Live specimen of Mygale, from logwood, St. Domingo	Mr. Thomas Crossley.
Live Snake, from logwood, St. Domingo.	Mr. Thomas Crossley.
A collection of West Indian Fruits, Wax Models, Lichens, and Insects	Rev. J. Bell.
Amphisbæna, Ahætulla, Anaconda, and other Reptilia (17 jars)	Mr. S. L. Nussey.
Magpie and live Hedge-hog.....	Mr. T. W. Stansfeld.
Eggs of the Chamæleon	Mr. Rudolph Gerheusser.
Stoat and Weasels.....	Mr. T. W. Stansfeld.
Didunculus strigirostris, Samoa	Purchased.
Specimen of horny growth from the knee of a cow	Dr. Goldie.

Apteryx Australis	Purchased.
Tinamou (Tinamus Tao)	Zoological Society.
Cuckoo Goatsucker	Mr. T. W. Stansfeld.
Specimens of Teius, Amphisbæna, and three other snakes	Mrs. Foster, Manchester.

ARCHÆOLOGY.

Fragment of mortarium, Heddington	Mr. Sydney Lupton, M.A.
Three teeth of Aetobatis found in a Mummy case	The late P. O'Callaghan, LL.D., D.C.L.
Further collection of Flint Implements from Adel	Mr. Twigg, Reformatory, Adel.
Two antique Carbines	Mr. T. R. Clapham, Austwick Hall, Clapham.
Cinerary Urn; Bronze Ampulla; fragment of mortarium (Samian Ware); handle of mortarium; fragments of vessel with York frill; fragments of pottery, with Caistor glaze; three mediæval embossed tiles; collection of bone pins	Purchased.

TECHNOLOGY.

Specimen of artificial stone, Belgium Specimens of Low Moor and Swedish Iron Shaving of an Armour-plate of H.M.S. Valiant	Mr. Sydney Lupton, M.A.
Crystallised Lactose or Milk Sugar	Messrs. Harvey & Reynolds.
Specimens of Cudbear and Orchil	Mr. S. L. Nussey.

PUBLICATIONS.

Weather Charts of Meteorological Office	Mr. E. Filliter.
Reports of the Geological Survey of Missouri, 1855-71 Preliminary Report on Iron Ores and Coalfields, with Atlas, 1872	Mr. R. Pumpelly, State Geologist of Missouri.
Works of Count Rumford, Vols. II., III. Proceedings of American Academy of Arts and Sciences, part of Vol. VIII., Vol. IX.	American Academy of Arts and Sciences.
Second Annual Report of the Zoological Society of Philadelphia	The Society.
Synopsis of Flora of Colorado Bulletin of U.S. Geological Survey of the Territories, No. I.	Dr. F. V. Hayden.

Brief Sketches of Booterstown and Donnybrook, Parts I. and II.	Rev. B. H. Blacker, Blackrock, Dublin.
Reliquiæ Aquitanicæ, Part XV.	Executors of the late Henry Christy.
Catalogue of Birds, Vol. I. Guide to 1st and 2nd Egyptian Rooms " Egyptian Galleries (Vestibule) " Græco-Roman Sculptures " Exhibition Rooms of Natural History and Antiquities Hand-list of Seals, &c. Roman Medallions.....	Trustees of the British Museum.
Statistics of Tasmania for 1873	Mr. W. B. Gellibrand, Cleveland, Tasmania.
Report of Halifax Literary and Philosophical Society for 1874.....	The Society.
Index to Transactions, Proceedings, and Journal of Geological Society, 2nd Ed.	Purchased.
Report of President and Treasurer of Harvard College for 1872-3 Report of Board of Overseers of do. for 1872-2 Harvard University Catalogue, 1873-4 ...	Board of Overseers of Harvard College, Cambridge, U.S.
Report of Board of Public Education of 1st School District of Pennsylvania for 1873	Board of Education of Pennsylvania.
Report of Board of State Charities of Massachusetts for 1872-3	Board of State Charities of Massachusetts.
Report of the Board of Agriculture of Massachusetts for 1873-4	Board of Agriculture of Massachusetts.
Report of the Board of Education of Massachusetts for 1872-3	Board of Education of Massachusetts.
Temperature Chart of the United States.	Smithsonian Institution.
The Cape Catalogue of 1159 Stars.....	Lords of the Admiralty.
7th Quarterly Report of the Sub-Wealden Exploration	Mr. E. H. Willett, Brighton.
Hand-book to Leicester Town Museum (Natural History and Geology) Presidents' Addresses and Reports of Leicester Literary and Philosophical Society, 1867-72	Leicester Literary and Philosophical Society.
Catalogue of the Library of the Manchester Geological Society, 1875.....	The Society.

Publications of the Royal University of Norway (17 pamphlets)	The University.
On the "Showing-off" of the Australian Bustard (pamphlet) On some points in the Anatomy of the Columbæ On certain muscles of the thigh of birds and their value in classification (2 parts)	The Author, Prof. A. H. Garrod, M.A.
Memoirs illustrating the following maps:—88 N.E., 90 N.E., 91 N.W., 93 N.W., 98 N.E., and 98 S.E.	The Director General of H.M. Geol. Survey.
Chronological and Descriptive Indices of Patents from Sept. 8, 1872, to Aug. 19, 1874 Abridgments of Specifications of Patents published in 1873-4 (14 parts)	The Commissioner of Patents.
Various pamphlets, &c., on subjects in Geology, Zoology, Archæology, &c.	Mr. A. W. Morant, Borough Engineer.
Fifteen Pamphlets on various branches of Natural History	The Author, W. Saville Kent.
Report of the U.S. Commissioner of Agriculture for 1873	U.S. Commissioner of Agriculture.
Report of U.S. Geological and Geographical Survey of Colorado for 1873	Dr. F. V. Hayden, U.S. Geologist, Washington.
MS. notes or illustrations of Insects, part containing Diptera	Mr. Townend Glover, Washington.
Various Pamphlets and Reports	Mr. T. G. Denny.
Reports of U.S. Dept. of Agriculture, 1874	The Department.
Report of Geological Survey of Missouri (with Atlas), 1873-4	Mr. G. C. Broadhead, State Geologist, St. Louis.
Report U.S. Geological Survey of Territories, Vol. VI. Lists of Elevations, 3rd Ed. Catalogue of Publications	Dr. F. V. Hayden, U.S. Geologist, Washington.
Phillips' Geology of Yorkshire, pt. I., 3rd Ed.	Purchased.

PERIODICALS.

WEEKLY.

Nature	Purchased.
Leader (Australian Newspaper)	Publishers.
Australasian	Publishers.

MONTHLY.

American Journal of Science and Arts Annals and Magazine of Natural History Geological Magazine.....	Purchased.
Illustrated Australian News	Publishers of the "Leader."
Monthly Notices of the Proceedings of the Royal Society of Tasmania (yearly) ...	Royal Society of Tasmania.
Journal of the Chemical Society.....	Chemical Society.
Bulletin of the Essex Institute.....	Essex Institute, U.S.A.
Monthly Notices of the Royal Astronomical Society	Royal Astronomical Society.

QUARTERLY.

Quarterly Journal of Science Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	Geological Society.
Quarterly Returns of Marriages, Births, and Deaths.....	Registrar General.
Journal of the Royal Historical and Archæological Association of Ireland.....	Royal Historical and Archæological Association of Ireland.
Journal of the Anthropological Institute..	Anthropological Institute.
Proceedings of the Geologists' Association.	Geologists' Association.
Zeitschrift für Wissenschaftliche Zoologie (4 pts. a year).....	Purchased.

ANNUALLY.

Philosophical Transactions	Purchased.
Mineral Statistics of the United Kingdom.	Director General of the Geological Survey.
Communications to the Yorkshire Philosophical Society and Annual Report ...	Yorkshire Philosophical Society.
Proceedings of the Glasgow Philosophical Society	Glasgow Philosophical Society.
Mittheilungen der kais. und königl. geographischen Gesellschaft in Wien	Royal Imperial Geographical Society of Vienna.
Proceedings of the Academy of Natural Sciences of Philadelphia (3 pts. a year)	Academy of Natural Sciences of Philadelphia.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Proceedings of the Royal Society of Edinburgh Transactions of do	Royal Society of Edinburgh.

Publications of the Ray Society	Purchased.
Abstract of the Proceedings of the Liverpool Geological Society	Liverpool Geological Society.
Transactions of the Edinburgh Geological Society	Edinburgh Geological Society.
Kongliga Svenska Vetenskaps Akademiens Handlingar Do. do. Lefnadsteckningar Ofversigt af Kongliga Vetenskaps Akademiens Förhandlingar	Royal Swedish Academy of Sciences.
Natural History Transactions of Northumberland and Durham.....	Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne, and Tyneside Naturalists' Field Club.
Proceedings of the Berwickshire Naturalists' Club.	Berwickshire Naturalists' Club.
Proceedings of the Liverpool Literary and Philosophical Society	Liverpool Literary and Philosophical Society.
Proceedings of the Boston Society of Natural History Memoirs of do.	Boston Society of Natural History.
Transactions of the Historic Society of Lancashire and Cheshire	Historic Society of Lancashire and Cheshire.
Memoirs of the Royal Astronomical Society	Royal Astronomical Society.
Greenwich Observations	Lords of the Admiralty.
Transactions and Proceedings of the New Zealand Institute	New Zealand Institute.
Proceedings of the Warwickshire Naturalists' and Archæologists' Field Club	Warwickshire Naturalists' and Archæologists' Field Club.
Annual Report and Papers of the Associated Architectural Societies	Associated Architectural Societies.
Journal and Annual Report of the Royal Institution of Cornwall.....	Royal Institution of Cornwall.
British Association Report..... ..	British Association.
Annual Report of the Royal Cornwall Polytechnic Society	Royal Cornwall Polytechnic Society.
Annual Report of the Smithsonian Institution	Smithsonian Institution.
Annual Report of the Warwickshire Natural History and Archæological Society	Warwickshire Natural History and Archæological Society.

Annual Report of the U.S. Patent Office	United States Patent Office.
Annual Report of the Hull Literary and Philosophical Society	Hull Literary and Philosophical Society
Annual Report of the Belfast Naturalists' Field Club	Belfast Naturalists' Field Club
Annual Report of the Liverpool Free Public Library, Museum, and Schools .	Free Library, Liverpool.
Annual Report of the Geologists' Association	Geologists' Association.
Annual Report on the Sanitary Condition of Leeds	Medical Officer of Health for Leeds.
Annual Report of the Minnesota Historical Society	Minnesota Historical Society
Annual Report of the Museum of Comparative Zoology at Harvard College, U.S.A.	Museum of Harvard College, Cambridge, Mass.
Annual Report of the Birkenhead Literary and Scientific Society	Birkenhead Literary and Scientific Society.
Annual Report of the Winchester College Natural History Society	Winchester College Natural History Society.

Canadian Journal (3 or 4 pts. a year).....	Canadian Institute, Toronto.
Yorkshire Archæological and Topographical Journal	Yorkshire Archæological and Topographical Association
Proceedings of the Royal Society	Royal Society.
Smithsonian Miscellaneous Collections ... " Contributions to Knowledge	Smithsonian Institution.
Memoirs of the Manchester Literary and Philosophical Society ..... Proceedings do. (about fortnightly, Oct. to April)	Manchester Literary and Philosophical Society.
Journal of the Royal Dublin Society (about once a year)	Royal Dublin Society.
Proceedings of the Royal Institution (2 pts. a year).....	Royal Institution of Great Britain and Ireland.
Proceedings of the Zoological Society (3 pts. a year—May, Oct., March)	Zoological Society.
Edinburgh Astronomical Observations ...	Royal Observatory, Edinburgh.

Transactions of the American Philosophical Society ..... Proceedings do. (several pts. a year)	American Philosophical Society.
Abridgments of Specifications of Patents, with Indices	Commissioner of Patents.
Transactions of the Academy of Sciences of St. Louis	The Academy of Sciences of St. Louis, U.S.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger	Royal Danish Society of Sciences.
Proceedings of the Royal Irish Academy	Royal Irish Academy.
Journal of the Royal Geological Society of Ireland	Royal Geological Society of Ireland.
Transactions of the Manchester Geological Society	Manchester Geological Society.

LIST OF OFFICERS AND COUNCIL,

1875-6.

OFFICERS.

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HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN .	J. D. HEATON, M.D., F.R.C.P.

The above officers, with the following gentlemen, form the

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General Curator and Assistant Secretary . LOUIS C. MIALL, F.G.S.

Curator's Assistant . . . . . C. J. CLARKE.

LIST OF MEMBERS AND SUBSCRIBERS,

1874-5.

* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	Aldam, Wm., M.A.	Frickley Hall, Doncaster.
3	Armitage, Wm. James	Southgate, London, N.
4	Arthington, Robert	73, Hunslet Road.
1	Atkinson, John William	13, Woodhouse Square.
5	Baines, Edward	St. Ann's Hill, Burley, near Leeds.
6	Barran, John	Chapel-Allerton Hall.
20	Battye, James C.	Spring Field, Yeadon.
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benjamin, Jun.	York Place.
9	Broadhead, Henry	Chapel-Allerton.
10, 11	Brown, James (2 shares)	Rossington, Doncaster.
31, 62	Brown, Samuel James (2 shares)	Loftus Hill, near Knaresborough.
13, 14	Calverley, Edmund (2 shares).	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	Chorley, Henry	8, Park Square.
17	Clapham, Samuel	19, Cookridge Street.
19	Coghlan, William	Oak Villa, Grosvenor Road.
21	Cudworth, John W.	52, Mount Preston.
7	Darwin, Francis, M.A.	Creskeld Hall, Otley.
22	Denison, William Beckett, M.A.	Meanwood Park.
28*	Dibb, Thomas Townend	
25	Eddison, John Edwin, M.D.	29, Park Square.
26	Ellershaw, John	Oakfield, Kirkstall.

27	Ellershaw, Walter . .	Hull.
28	Empson, Christopher .	Bramhope Hall.
29	Ford, Robert Lawson .	Adel Grange.
46	George, Thomas Willington	Gledhow Grove.
33	Goodman, Benjamin .	Gledhow House.
34, 35	Gott, Rev. John, D.D. (2 shares) . . .	Woodsley House.
36-8	Gott, William Ewart (3 shares) . . .	Armley House.
61	Greenhow, Thomas Michael, M.D. . . .	Newton Hall.
39	Harding, T. R. . .	St. Ann's Tower, Headingley.
40	Heaps, John William .	Terrace House, Chapeltown Road.
41	Heaps, Charles Denison .	Woodhouse Lodge, Woodhouse Lane.
42	Heaton, John Deakin, M.D., F.R.C.P. . .	Claremont, Leeds.
44	Hirst, Joseph . . .	Wharfedale Lawn, Wetherby.
45	Holt, Joseph . . .	Wedderburn House, Harrogate.
30	Horsfall, John, M.A., F.R.C.S. . . .	31, Albion Street.
24	Howgate, William . .	Park Row.
47	Ingham, Constantine .	Clarendon Place.
48	Ingham, William . .	Belmont, Chorley Lane.
49	Jowitt, John . . .	Harehills Grove, Potternewton near Leeds.
50	Joy, William Glover .	Moorfields, Headingley.
51	Kinnear, Thomas John, M.A.	Horsforth Hall.
52	Latimer, John . .	St. Mark's Villa, Woodhouse Lane.
55	Luccock, John Darnton .	54, North Street.
57	Lupton, Francis . .	Beechwood, Roundhay.
56	Lupton, Sydney . .	The Harehills, Roundhay Road.
58	Makins, Charles . .	17, Craven Hill, Regent's Park, London, N.W.
60	Marshall, Rev. Edmond Henry . . .	Launceston, Cornwall.

63	Marshall, Henry Cowper	Weetwood Hall.
59	Marshall, Arthur, F.G.S.	Headingley House.
64, 65*	Marshall, J. G., F.G S. (2 shares). . . .	
67	Marshall, Victor Alexander Ernest, B.A. . .	Headingley House.
66	Marshall, R. D. . .	Cookridge Hall.
68	Nunneley, J. A., M.B. .	22, Park Place.
69	Rhodes, John . . .	Potternewton House.
70	Shepherd, John . . .	Beech Grove House, Tadcaster.
77*	Smith, John Metcalfe (Trustees of) . .	
32	Smith, Henry Stooks .	Headingley.
71	Tatham, George . .	Springfield Mount.
72	Teale, Thomas Greenwood	Bentley House, Meanwood.
73	Teale, Mrs. . . .	St. James' Lodge.
43	Tennant, Robert, M.P. .	Scarcroft Lodge, Shadwell.
74	Tottie, John William .	Coniston Hall, Bell Busk, near Skipton.
54	Waite, James Butler .	Belvidere House, New Leeds.
75	Walker, Edward . .	15, Springfield Mount.
76	Ward, William Sykes, F.C.S. . . .	Denison Hall, Hanover Square.
53	Whiteley, William . .	Butt's Cottage, Armley.
78*	Wilson, Richard Bassett (Trustees of) . .	
12	Wilson, Rev. Benjamin .	Bank House, Mirfield.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

1	Atkinson, Daniel Hopkin	16, Brunswick Place.
32	Atkinson, Edward, F.L.S., F.Z.S.	2, Albion Place.
116	Baines, Frederick . .	Weetwood Lodge.
2	Balme, E. B. Wheatley .	Cote Wall, Mirfield.
95-7 99, 100 *	Beckett, William, Trustees of, (5 shares).	

15	Bilbrough, Joseph Brooks	15, Beech Grove Terrace.
3	Birchall, Edward . .	Inglemoor House, Moorland Road.
4	Boothroyd, W. . .	Grove Mill, Headingley.
88	Boswell, J. J. . . .	Althorp Villa, Spencer Place, New Leeds.
33-4, 84	Brown, S. J. (3 shares) (P)	Loftus Hill, near Knaresborough.
5-6	Brown, William (2 shares)	Bardon Grange, Weetwood.
7	Buckton, George . .	Roundhay.
89	Buckton, Joshua . .	Broomhill, Moor-Allerton.
113	Burkill, Isaac Henry .	Chapeltown.
90	Butler, J. O. . .	The Abbey House, Kirkstall.
8	Chadwick, Charles, M.D., D.C.L., F.R.C.P. .	
9	Chadwick, William .	Arksey, Doncaster.
10	Cliff, Joseph . . .	Wortley.
14	Conyers, W. H. . .	Ilkley.
12, 13	*Cooper, W. J. (2 shares).	
98	Craven, Joseph . .	Clifton House, Beeston Hill.
77	Crofts, John . . .	Adel.
17	Curwood, Capel Augustus	Cliff House.
44, 45	Darwin, Francis (2 shares)	Creskeld Hall, Otley.
18	*Donisthorpe, G. E.	
19	Fairbairn, Sir Andrew, M.A.	Goldsborough Hall, Knaresborough.
20	Farrer, James . .	Ingleborough House, Clapham, near Lancaster.
105	Ferguson, William . .	Ridge House, Woodhouse Lane.
21	Filliter, Edward, M. Inst. C.E., F.G.S. . .	West Mount, Clarendon Road.
87	Gott, Rev. John, D.D. (P)	Woodsley House.
101-110, 114-15	Gott, Wm Ewart (P) (12 shares).....	Armley House
22	Hall, Thomas . . .	Heath Cottage, Moor-Allerton.
23	Hargrave, James . .	Willaston House, Harrogate.
	*Hargreaves, S. B.	
16	Harvey, William . .	Bellevue Terrace.
24	Henderson, Rev. W. G., D.C.L. . . .	Grammar School.
26	Hey, Samuel, F.R.C.S.	1, Albion Place.

31*	Hey, William, F.R.C.S. .	
104	Holroyd, James . . .	Gledhow.
117	Howarth, Rev. William Lee	Elmwood House.
36	Hudson, Henry . .	Oakwood, Roundhay.
37	Hudson, Robert John .	Moorville, Burley-in-Wharfedale.
52	Ingham, Charles Alfred .	Belmont, Chorley Lane.
38	Ingham, Henry Constantine . . .	23, Lyddon Terrace.
39	Jowitt, Robert Benson .	Elmhurst, Potternewton.
40	Joy, Walker . . .	3½, Queen Square.
41	Kennedy, Thomas Stuart	Meanwood.
43	Kitson, James . .	Elmete Hall, Roundhay.
46	Kitson, J. Hawthorne .	Hyde Terrace.
47	Kitson, James, Jun. .	Spring Bank, Headingley.
48	Kitson, Frederick William	Burley, near Leeds.
49	Latchmore, Edward .	4, Ridge Mount, Cliff Road.
50	Leather, J. T. . .	Leventhorpe Hall.
91*	Ludolf, Henry . .	
53	Lupton, Arthur . .	Headingley.
54	Lupton, Joseph . .	The Elms, Chapel-Allerton.
55	Lupton, John . .	Moorlands, Headingley.
56	Lupton, Darnton . .	The Harehills, Roundhay Road.
57	Lupton, Francis Martineau, M.A. . . .	Wellington Street.
58	March, Joseph Ogden .	Beech Grove House, Woodhouse Lane.
94	Malcolm, John Cooper .	New Leeds.
59	Margerison, J. L. . .	4, Porchester Gate, Bayswater Road, London
25	Marsden, H. R. . .	Avenue House, Woodhouse Lane,
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
61	Marshall, John, M.A. .	Headingley Lodge.
62	Marshall, Stephen Albert	Weetwood.
27	Maude, Edmund . .	Middleton Lodge, Beeston.
63	Meggeson, George . .	6, Cromer Terrace.
29	Milner, Henry B. W. .	Kirkstall Grange.
64	Nickols, Richard . .	West Derby, Liverpool.

55, 56	Nicholson, Albert H. (2 shares) . . .	46, Finsbury Circus, London, E.C.
67	Nunneley, A. G. . .	9, Beech Grove Terrace.
68	Oxley, Henry . . .	Weetwood.
28	Passavant, P. W. . .	De la Haye House, Chapeltown Rd.
11	Price, William Nicholson	7, East Parade.
30	Prichard, W. . . .	Bishopgate Street.
93	Ralph, John . . .	8, Brunswick Place.
69	Reynolds, Richard, F.C.S.	Cliff Lodge, Hyde Park.
112	Sagar-Musgrave, J.M. .	Red Hall, Shadwell.
92	Scattergood, Thomas .	41, Park Square.
118	Schofield, J. C. . .	Pendleton House, Spencer Place. New Leeds.
	Schunck, Edward . . .	Adel.
51, 121	Stansfeld, T. W. (2 shares)	Weetwood Grove.
70	Stewart, G. M. . .	13, Queen's Square.
71*	Taylor, George . .	Buckingham House, Headingley.
72*	Taylor, Samuel.	
73	Teale, T. Pridgin, M.A., F.R.C.S. . . .	North Grange, Headingley.
74	Teasdale, Washington .	Rosehurst, Headingley.
75	Tennant, Robert, M.P. (P)	Scarcroft Lodge, Shadwell.
76	Tennant, Thomas . .	21, Blenheim Terrace.
78	Tetley, F. W. . .	Fox Hill, Weetwood.
79	Turner, Richard Bickerton	Bank of England, South Parade.
80	Wailes, William . .	Harrogate.
111	Watson, William . .	Elmwood, Harrogate.
81, 82*	Whitaker, John (2 shares)	
42	Whiting, John . .	Regent Villas, Headingley.
83	Wicksteed, Joseph Hartley	3, Eldon Terrace, Woodhouse Lane.
85	Wilson, John . . .	Seacroft Hall.
86	Wilson, Thomas, M.A. .	3, Hillary Place.
35	Wood, Richard . .	Newton Villa, Potternewton.

ORDINARY MEMBERS.

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

Armistead, Joseph John . .	Chapeltown.
Atkinson, J. H.	14, East Parade.

Buckton, Joseph	Moorland Terrace.
Bulmer, John	4, Winfield Mount, Potternewton Lane.
Cadman, William	Roundhay.
Garlick, William	6, Hyde Terrace.
Hewitt, E. W.	Harrogate.
Ikin, Joshua Ingham, F.R.C.S.	19, Park Place.
Martin, Samuel Dickinson	Beech Grove, Harrogate.
Ramskill, Josiah, M.R.C.S.	13, Meadow Lane.
Stratten, Rev. J. R.	Park Square.
Sykes, Henry Marshall	Roundhay.

NEW ORDINARY MEMBERS.

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

Allbutt, T. Clifford, M.A., M.D., F.S.A., F.L.S.	Lyddon House, Virginia Road.
Baily, Walter, M.A.	24, Hyde Terrace.
Baines, Edward Manwaring	6, Ashwood Terrace, Headingley Hill.
Barr, Frederick Horatio	Mount View, Headingley Lane.
Barwick, J. M.	Glen View, Shipley.
Benson. John	19, Albion Street.
Best, William	18, Lyddon Terrace.
Bolland, W. T.	Hunslet Lane.
Booth, Joseph	Grosvenor Road, Headingley Lane.
*Botterill, John	
Bousfield, Charles Edward	St. Mary's Mount.
Briggs, Riley	Springfield Mount.
Carpenter, Rev. J. Estlin, M.A.	
Carter, Robert Meek, M.P.	Woodhouse Lane.
Corson, George	Far Headingley.
Dawson, Edwin	17, Blenheim Terrace.
Denny, T. G.	46, Burley Street.
Dixon, J. W.	13, Vernon Road.
Downs, T. W. A.	12, Blenheim Square.
Eddison, Frederick	The Manor, Adel.
Eddison, Robert William	Headingley.

Firth, William	Burley Wood House.
Ford, J. Rawlinson . . .	Adel Grange.
Ford, T. B. P.	Ilkley.
Gascoigne, F. C. Trench . .	Parlington Park.
*Greenwood, Thomas.	
Hargrave, John	St. Ann's Lodge, Burley, near Leeds.
Hepper, John	Clareville, Headingley.
Holt, Henry Percy . . .	Cavendish Road.
Holt, Joseph (P) . . .	Wedderburn House, Harrogate.
Horsman, Thomas, B.A. . .	3, High Royd, Belle Vue Road.
Illingworth, William . . .	Headingley Cliff.
Ingham, Tom	Belmont, Chorley Lane.
*Irwin, Edward	
Irwell, Julius	Highfield House, Headingley.
Jackson, Rev. Edward, M.A. .	9, Brunswick Place, North Street.
*Jackson, William S.	
Kempe, Arthur	29, Brunswick Terrace.
Kemplay, Miss	St. John's Place.
Lambert, Joseph . . .	Rose Court, Headingley Lane.
Lawson, Thomas. . . .	Potternewton.
Lawson, John	Beech Grove Hall.
Leather, J. W.	
Ledgard, William . . .	Eller Close, Roundhay.
Lupton, Joseph	Armley.
Manning, H. J.	Manning, Wardle, & Co., Hunslet.
McCheane, Rev. J. H., M. A. .	Trinity Parsonage, Hyde Terrace.
March, George	Oaklands, Scarcroft.
Middleton, John William . .	Mount Terrace, Potternewton.
Morley, Herbert Ogle . .	20, Victoria Terrace.
Myers, William Beswick . .	Gristhorpe, near Filey.
Myers, W. C.	Grove House, Roundhay.
Nelson, Henry	St. John's Cottage, St. John's Road.
Nunneley, Thomas . . .	9, Beech Grove Terrace.
Nussey, George Henry. . .	St. Ann's Lane, Burley, near Leeds.
Nussey, Obadiah . . .	Morley House, Headingley
Nussey, Thomas . . .	Virginia House, Headingley-Hill.
Nussey, Samuel Leathley . .	Potternewton Hall.
Nussey, Peter . . .	Spring Ville, Shaw Lane, Headingley

*Payne, R. E.	
Peel, Mrs.	Ackworth Park, Pontefract.
Ramsbotham, S. H., M.D.	16, Park Place.
Raynar, John	37, Lyddon Terrace.
Read, Miss	Chapel-Allerton
*Riley, Thomas.	
Robinson, Richard	Ousthorpe Villa, Clarendon Road.
Robinson, R. H.	Kirkstall Hall.
Sharpe, Miss	21, Victoria Place, Camp Road.
*Simpson, R. W.	
Smith, John Edward	12 and 13, Clements Inn, Strand, London.
Smith, William Farrar	Hope Villa, Woodhouse Lane.
Somers, Francis	Fountain Terrace.
Stables, James	Horsforth.
Stead, G. A.	Ashwood Villas, Headingley.
*Talbot, George.	
Temple, Rev. Henry, M.A.	St. John's Vicarage, Woodhouse Lane.
*Tennant, Joseph Mason.	
Titley, Anthony	Manor House, Victoria Grove, Headingley.
Titley, T. A.	Gledhow.
Tottie, J. W. (P)	Coniston Hall, Bell Busk.
Townsley, Richard	6, Springfield Mount.
*Wade, John.	
Walker, H. B.	Headingley Hill.
Whiteley, Thomas	Blenheim Square.
Willson, J. J.	Newton Grove.
Young, John	Moor Hill Farm, Headingley.

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Ambler, T.	9, Park Place.
Appleton, Henry	Adel Lodge.
Armistead, Edwin	Albion Street.
Asquith, John Robert	Bond Place.
Atkinson, G. P.	Pontefract.
Atkinson, Miss	Clarendon Road.

Atkinson, Law	Clarendon Road.
Baines, J. W.	
Barran, Charles	Chapel-Allerton Hall.
Barran, John, Jun.	St. Mary's Mount, Newton Hill.
Bartholomew, W. H., C.E.	Albion Villas, New Leeds.
Battye, R. C.	Newton Grove.
Bedford, James	Woodhouse Cliff.
Beverley, Mrs.	Grosvenor Terrace, Headingley.
Beverley, Robert	Woodsley Terrace.
Beverley, W. A.	17, St. John's Terrace.
Bickerdike, Rev. John, M.A.	St. Mary's Vicarage, Beckett Street, Burmantofts.
Birchall, Oswald	Kirkstall Grove.
Braithwaite, James, M.D.	Clarendon Road.
Braithwaite, Richard Hale	Do.
Brigg, Rev. W. H.	Bolton, near Bradford.
Browne, J. C.	48, Briggate.
Bruce, William	Moorland Terrace.
Buckley, J. C.	10, Blenheim Terrace.
Buckton, Richard	Wheatfield Lodge, Headingley.
Bulmer, Charles	Blenheim Lodge.
Bulmer, Clifford Charles	do.
Burton, F. H.	Newtown Works.
Burton, J. W.	27, Springfield Place.
Butler, Edmund.	Riseholme, Horsforth.
Byles, Rev. A. Holden, B.A.	7, Richmond Road, Headingley.
Calvert, John P.	6, Springfield Place.
Campbell, Archibald	23, Hyde Terrace.
Chadwick, W.	Merton Villa, Cardigan Road.
Chatwin, E. W.	1, Willow Grove Road.
Cheetham, W.	Woodbottom Cottage, Horsforth.
Clare, W., M.D.	Park Square.
Clark, Miss	S. L. Nussey, Esq., Potternewton Hall.
Clay, J. W.	16, Warwick Place.
Coates, James Irwin, F.R.A.S.	Southend, Headingley.
Conyers, Joseph	Castle Grove, Headingley.
Cooke, William	Moorfield House, Moor-Allerton.

Cooper, G. I.	Woodhouse Chemical Works.
Craig, Robert	98, Briggate.
Crampton, W. T.	Woodland View, Chapeltown.
Crawford, James	Chapel-Allerton.
Crawford, J. W.	Newton Lane.
Crosley, William	33, Mount Preston.
Croysdale, John	4, Beech Grove Terrace.
Cuthbert, John	163, Woodhouse Lane.
Daniel, Mrs.	37, Camp Road,
Davis, Edward	Milton Lodge, Far Headingley.
Dawson, William	Larchfield Mills, Hunslet Lane.
Dixon, Henry	6, De Grey Road.
Dolan, John Cass	North Hill Road, Headingley.
Douglas, Dr.	7, South Parade.
Douglas, John	Beech Grove, Oulton.
Dufton, Arthur Wellesley	74, Springfield Place.
Eagland, W. H.	Lyddon Terrace.
Emsley, G. A.	Clarendon Mount.
Fairley, Thomas, F.R.S.E.	8, Newton Grove.
Falcon, Thomas	Pudsey.
Fallow, T. M.	Chapeltown.
Farrar, Abraham, Jun.	115, Hyde Park Road.
Fenwick, Thomas	Allerton Hill, Chapel-Allerton.
Ferns, Francis	Cliff Road.
Foster, A. S.	Garforth.
Fox, James, C. E.	Woodlands, Horsforth.
Fraser, John	Grove House, Headingley.
Gamble, J. H.	Kendall Street.
Gaunt, Miss	4, Victoria Place, Camp Road.
Goldie, George, M.D.	Fitzroy Villa, Crimble Street.
Goodall, Charles	Francis Street, New Leeds.
Goodier, Rev. J. H.	St. Jude's, Hunslet Lane.
Granger, Charles	Newton Grove, Chapeltown Road.
Green, Prof., M.A.	5, Marlborough Terrace, Belle Vue Road.
Greene, John	Whinmoor, near Seacroft.
Greenwood, Frederick	School of Medicine, Park Street.
Greenwood, W. F.	Park Villas, Hyde Park Road.

Haigh, Rev. C. D., M.A.	3, Woodsley Terrace.
Hall, Frederick	North Street.
Hall, William	1, Hillary Place.
Hallilay, John	Burley Road.
Hamilton, R. W.	Cardigan Villas, Shaw Lane, Headingley.
Hammond, Thomas, Jun.	13, Hanover Square.
Handcock, George	5, Leopold Mount, Chapeltown Road.
Harding, T. W.	Hillary Lodge, Cavendish Road.
Hargrave, Charles	Oxley Hill, Moortown.
Harrison, Rev. F. L.	Vicarage, Burley.
Harrison, R. B.	6, Richmond Road, Headingley.
Harvey, Thomas	Ashwood, Headingley Hill.
Hassé, A. B.	31, Commercial Street.
Headland, Thos., Jun.	49, Briggate.
Heald, Alfred William	8, Springfield Mount.
Hebblethwaite, A. R.	12, Blenheim Terrace.
Hebblethwaite, W. J.	Moor Allerton.
Hennessy, J. F.	84, Briggate.
Hewetson, Henry.	2, Moorland Road.
Hezmalhalch, Joseph	Thorner.
Hill, John William, M.A.	Lynton Villa, Mount Preston.
Hill, M. S.	30, Mount Preston.
Hindle, J. E.	North Grange, Horsforth.
Hirst, J. A.	Hyde Lodge, St. John's Hill.
Hobson, Frederick	49, Briggate.
Hodgson, J. P.	10, De Grey Terrace.
Holmes, John	Methley.
Holmes, Joseph	92, Meadow Lane.
Hudson, Walter	Grey Stone House, Adwalton.
Hudswell, W.	Spencer Terrace, New Leeds.
Huggon, William, F.C.S.	50, Springfield Place.
Hurd, Samuel	Leopold Mount, Chapeltown Road.
Irwin, George	30, Albion Street.
Jackson, G. W.	5, Park Place.
Jackson, William Thomas	Headingley Hill.
Jefferson, William Lonsdale	15, York Place.

Jefferson, S., F.C.S.	17, Virginia Road.
Jepson, E. G.	8, Woodsley Terrace.
Jessop, T. R., F.R.C.S.	32, Park Square.
Jowitt, Miss	5, Newton Grove, New Leeds.
Joy, Lomas	Harrogate.
Kirkby, Thomas	8, Beech Grove Terrace.
Kirk, James	Killingbeck Hall.
Knight, J. C.	Queen's Place, Chapel-Allerton.
Knott, Joseph	Aire and Calder Navigation Co., Dock Street.
Land, R. T.	Leopold Street, New Leeds.
Lawson, Arthur T.	Beech Grove.
Leadman, Alexander	St. Ives, Headingley.
Lee, W.	45, Francis Street, New Leeds.
Legard, Albert G., M.A.	5, Montpelier Terrace
Lemprière, Capt.	1, Park Lane.
Leprince, A.	Brandon Terrace, Chapeltown Road.
Loe, James S.	147, Woodhouse Lane.
Lupton, Arthur G.	Beechwood, Roundhay.
Lupton, Edward Arthur	4, Blenheim Terrace.
Lupton, Henry	The Elms, Chapel-Allerton.
Lupton, William W.	Newton Hill.
March, Joseph	29, Francis Street, New Leeds.
March, Henry	Do.
Marshall, W. E.	1, Beech Grove Terrace.
Matterson, Miss	8, Cavendish Road.
Maude, Miss	Knowsthorpe House.
Middleton, William	Gledhow Grange.
Moore, Major	3, Woodhouse Square.
Morton, H. J.	Garforth.
Moxon, John	Spencer Terrace, Lewis Street, New Leeds.
Naylor, G. F.	Bond Street, Wakefield.
Naylor, J. W.	Allerton House, Chapeltown.
Newstead, J. S.	Beech Grove, Terrace.
Nichols, J. H.	St. Mark's Villas, Woodhouse.
Odgers, Rev. J. C., B.A.	7, Mount Preston.

Paley, Miss	West View Terrace, Chapeltown.
Pawson, A. H.	Lawn's House, Farnley, near Leeds.
Pawson, John Edward	Do.
Pawson, William	Do.
Pearson, John Thomas	Weetwood Road, Far Headingley.
Pettitt, Rev. John	Wortley Vicarage.
Pope, Edward	Farfield, Moor-Allerton.
Powell, William	13, Park-Place.
Rayner, George	Hyde Gardens, Clarendon Road.
Rayner, John	17, Vernon Road.
Redmayne, John	Chapeltown.
Reffitt, J. W.	5, Victoria Terrace, Belle Vue Road.
Reynolds, Freshfield	13, Briggate.
Richardson, Rev. E. A	30, Cliff Road.
Rider, James	4, High Royd, Belle Vue Road.
Robinson, Alfred	49, Lofthouse Place.
Robinson, Frederick	14, Mount Preston.
Robinson, Thomas	The Manor House, Farnley.
Rooke, Charles S.	Newton Hill, Potternewton.
Rooke, R. L.	Do.
Rowley, Walter, F.G.S.	South Milford.
Rücker, Prof., M.A.	13, Cromer Terrace.
Rushworth, William	44, Vicar Lane.
Rushworth, C. W.	Hillary Mount, Woodhouse Lane.
Ryder, Charles	Regent Villas, Headingley.
Salt, George	Saltaire, near Bradford.
Scatcherd, Oliver	Virginia Road.
Seaton, Henry	Wintoun House, North Street.
Shackleton, Joseph	Wortley.
Simpson, Frank E.	Springfield Mount
Smeeton, William	Commercial Street.
Smith, Edward James	Grosvenor Terrace, Headingley.
Smith, Stephen Ernest	Richmond Road, Headingley.
Smith, John Wales	2, Gordon Villas, Woodhouse Lane.
Smith, S. Milne	Calverley House.
Smith, Mrs. Henry	Highfield, Headingley.
Snowdon, Henry	12, Claypit Lane.

Stables, Ashley	Horsforth.
Stables, Henry	Do.
Style, Rev. G., M.A.	Giggleswick Grammar School.
Stringer, J. W.	18, Hyde Park Road.
Sykes, Alfred W.	Cookridge.
Tattersall, Frederick	Victoria Terrace.
Thompson, Vincent T.	High Royd, Belle Vue Road.
Thorne, H. A.	14, Cobourg Street.
Thorp, W. H.	Broomfield, Chapel Lane, Headingley.
Thorpe, Prof., Ph.D., F.R.S.E.	Headingley.
Thrippleton, John	37, Albert Terrace, Burley Fields.
Tiffany, George John	17, Grove Terrace.
Todd, William	Blundell Place.
Tootal, Miss	St. Mary's Mount.
Topham, John	Newton Lodge, Potternewton.
Trumble, H. G.	Basinghall Street.
Turner, Joseph	Spencer Place, New Leeds.
Turton, William	31, Victoria Terrace.
Wailes, Francis	2, Linton Terrrace.
Walker, William	Hanover Square.
Walker, James	5, High Royd, Belle Vue Road.
Walker, George	Newton Hill.
Walker, F. H.	32, Fenton Street.
Walker, A. T.	Newton Grove.
Walker, Henry	Oak House, Headingley.
Walley, Joseph	14, Eldon Terrace.
Ward, William	Manor House, Churwell.
Ward, Richard	Moor Road, Far Headingley.
Wardle, C. W.	Whitkirk.
Watson, Charles	Woodhouse Lane.
Wesley, John S.	Wetherby.
Wheelhouse, W. St. J., M.P.	14, Queen Street.
Wheelhouse, C. G., F.R.C.S.	Hillary Place.
Williams, Rev. C. Harley Drummond,	St. Luke's Vicarage, North Street.
Willett, Ernest H.	Arnold House, Brighton.
Wilson, Edmund	4, Osborne Terrace, Beech Grove.
Wood, Rev. Frederick J., M.A.	Priory, Camp Road.

Wood, Frederick	18, Hyde Terrace.
Wright, Howard	Phœnix Lodge, Chapel-Allerton.
Wright, Charles James, M.R.C.S.	4, Park Square.
Yewdall, John Cliff	Oaklands, Calverley.
Yewdall, David	Calverley Grange.
Yewdall, Edwin	40, Wade Lane.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE.

Ambler, Mrs.	9, Park Place.
Armistead, Mrs.	E. Armistead, Albion Street.
Atkinson, Miss Eleanor	Clarendon Road.
Atkinson, Miss Emily	Do.
Baily, Mrs.	24, Hyde Terrace.
Baines, Mrs. T.	Chapel-Allerton.
Baines, Mrs. J. W.	Oatlands, Burley.
Barran, Mrs., Jun.	St. Mary's Mount, Newton Hill.
Bartholomew, Mrs.	Albion Villas.
Bedford, Mrs.	Woodhouse Cliff.
Bedford, Miss	Do.
Bedford, Miss Lottie	Do.
Beverley, Mrs. R.	Woodsley Terrace.
Beverley, W. H	Do.
Beverley, Miss	Do.
Beverley, Arthur	3, Grosvenor Terrace, Headingley.
Beverley, Miss	Do.
Beverley, Mrs. W. A.	St. John's Terrace.
Birchall, Mrs. Edwin	Kirkstall Grove.
Birchall, Miss D. F.	Do.
Brigg, Mrs.	Bolton, near Bradford.
Bruce, Mrs.	Moorland Terrace.
Buckley, Miss	Blenheim Terrace.
Buckley, Miss Amelia	Do.
Buckton, Mrs. R.	Wheatfield Lodge, Headingley.
Buckton, Walter	Moorland Terrace.
Buckton, Miss	Do.
Buddon, Miss	St. Ives, Headingley.

Bulmer, Mrs. Charles . . .	Blenheim Lodge.
Bulmer, Miss Ada . . .	Do.
Bulmer, Mrs. Clifford . . .	Do.
Burton, Miss	27, Springfield Place.
Butler, Mrs. Edmund . . .	Riseholme, Horsforth.
Butler, Mrs. A. . . .	Kepstorn, near Leeds.
Butler, Miss	Do.
Butler, Hugh	Do.
Butler, Bernard	Do.
Byles, Mrs. A. Holden . .	9, Richmond Road, Headingley.
Campbell, Mrs.	20, Hyde Terrace.
Chadwick, Mrs. W. . . .	Merton Villa, Cardigan Road.
Charlesworth, Miss F. M. . .	17, Hanover Square.
Cheetham, Miss E. . . .	Woodbottom Cottage, Horsforth, near Leeds.
Clare, Mrs.	Park Square.
Clare, Miss	Do.
Cooke, Mrs.	Moorfield House, Moor-Allerton, near Leeds.
Crawford, Mrs. J. W. . .	Newton Lane.
Croysdale, Mrs.	4, Beech Grove Terrace.
Davis, Mrs. E.	Milton Lodge, Far Headingley.
Dixon, George Edward . .	6, De Grey Road.
Dixon, Miss	Do.
Dixon, Miss M. E. . . .	Do.
Douglas, Mrs.	Beech Grove, Oulton.
Edwards, Mrs.	20, Victoria Terrace.
Emsley, Mrs. G. A. . . .	Clarendon Mount.
Fairley, Mrs.	8, Newton Grove.
Falcon, Mrs.	Pudsey, near Leeds.
Farrar, Mrs., Jun. . . .	115, Hyde Park Road.
Fenwick, Mrs.	Allerton Hill, Chapeltown.
Ferns, Mrs.	Cliff Road.
Fraser, Mrs.	Grove House, Headingley.
Fraser, H. J.	Do. do.
Fraser, Miss	Do. do.
Garlick, Miss	6, Hyde Terrace.
Granger, Mrs.	Newton Grove, Chapeltown Road.

Granger, Farrington	Newton Grove, Chapeltown Road.
Granger, Miss	Do. do.
Granger, Miss Mary	Do. do.
Greene, Mrs.	Whinmoor, near Seacroft.
Greene, Miss	Do. do.
Greenwood, Miss	Park Villas, Hyde Park Road.
Hall, Mrs. F.	North Street.
Hall, Mrs. W.	1, Hillary Place.
Hallilay, Mrs.	Burley Road.
Hamilton, Mrs.	Cardigan Villas, Shaw Lane, Headingley.
Handcock, Mrs. G.	5, Leopold Mount, Chapeltown Road.
Harding, Mrs.	Hillary Lodge, Cavendish Road.
Hardy, Miss F.	Woodbottom Cottage, Horsforth.
Harrison, Mrs. F. L.	The Vicarage, Burley.
Harrison, Mrs. R. B.	6, Richmond Road, Headingley.
Headland, Miss	49, Briggate.
Heaton, Miss Helen	Claremont.
Heaton, Miss Marian	Do.
Hebblethwaite, Miss E. A.	Moor-Allerton.
Hebblethwaite, A. M.	Do.
Hewetson, Miss	2, Moorland Road.
Hill, Mrs. J. W.	Lynton Villa, Mount Preston.
Hirst, Mrs. J. A.	Hyde Lodge, St. John's Hill.
Hodgson, Mrs. J. P.	10, De Grey Terrace.
Holmes, Mrs. J.	Methley.
Hudson, Mrs.	Grey Stone House, Adwalton.
Hudswell, Mrs.	Spencer Terrace, New Leeds.
Irwin, Miss	Preston House, Tonbridge Street.
Irwin, Miss Hannah	Do. do.
Jackson, Mrs. W. T.	Headingley Hill.
Jackson, Mrs. G. W.	5, Park Place.
Jefferson, Mrs.	17, Virginia Road.
Jepson, Mrs.	8, Woodsley Terrace.
Jessop, Mrs.	32, Park Square.
Jowitt, Miss E. M.	5, Newton Grove, New Leeds.
Jowitt, Miss F.	Harehills Grove, Potternewton.

Joy, Mrs. Lomas	Harrogate.
Kirkby, Harry	3, Virginia Road.
Knight, Miss L.	Queen's Place, Chapel-Allerton.
Lambert, Miss	Rose Court, Headingley Lane.
Lawson, F. W.	Beech Grove.
Lawson, Miss	Do.
Lawson, Miss M.	Do.
Lawson, Miss Kate	Do.
Leadman, Miss	St. Ives, Headingley.
Leadman, Miss O.	Do.
Ledgard, Miss	Eller Close, Roundhay.
Lee, Mrs. W.	45, Francis Street, New Leeds.
Lee, J. G. T.	Messrs. Beckett & Co., Park Row.
Lemprière, Mrs.	1, Park Lane.
March, Miss E.	29, Francis Street, New Leeds.
Matterson, Miss E. A.	8, Cavendish Road.
Middleton, Mrs.	Gledhow Grange.
Middleton, Miss	Do.
Moore, Mrs.	3, Woodhouse Square.
Myers, Miss	Miss Matterson's, 8, Cavendish Road.
Myers, Miss	Grove House, Roundhay.
Myers, Miss Henrietta	Do. do.
Naylor, Mrs. J. W.	Allerton Hill, Chapeltown.
Naylor, Mrs.	Newton Lodge, Potternewton.
Naylor, Miss J. E.	Do. do.
Nelson, C. J.	St. John's Cottage, St. John's Road.
Nelson, Herbert	Do. do.
Nelson, Miss M. E.	Do. do.
Nelson, Miss L.	Do. do.
Newstead, Mrs.	6, Beech Grove Terrace.
Nussey, Miss	Springville, Shaw Lane, Headingley.
Passavant, William	De la Haye House, Chapeltown Road.
Passavant, Miss	Do. do.
Passavant, Miss L. M.	Do. do.
Passavant, Miss Fanny	Do. do.
Payne, E. S.	13, Briggate.

HONORARY MEMBERS.

Sir Rutherford Alcock, K.C.B., D.C.L., Athenæum Club, London.

Spencer F. Baird, M.D., Smithsonian Institution, Washington, United States.

Rev. Canon Barry, D.D., King's College, London.

W. Boyne, F.S.A., London.

Signor Frederico Lancia Duca di Brolo, Palermo.

Joseph Burland, South Cave.

Dr. Day, Mendoza, Argentine Republic.

Lewis Llewelyn Dillwyn, M.P., F.L.S., F.G.S., Hendrefoilan, Swansea, Glamorganshire.

The Lord Bishop of Ely, The Palace, Ely.

The Right Hon. Earl Fitzwilliam, K.G., Wentworth House, Rotherham; 19, Grosvenor Square, London, W.

Herr Franz Foetterle, Secretary of the Imperial Royal Geographical Society of Vienna, &c., &c.

George Lane Fox, Bramham Park.

Francis Galton, F.R.S., 42, Rutland Gate, Knightsbridge, London, S.W.

W. H. Gellibrand, Cleveland, Ouse, Tasmania.

Cyril Graham, B.A., &c., 9, Cleveland Row, St. James', London, S.W.

Wm. Hartley, D'Urban, Port Natal.

The Lord Bishop of Hereford, Palace, Hereford.

Rev. Thomas Hincks, B.A., F.R.S., Charlemont, Taunton.

The Very Rev. Walter Farquhar Hook, D.D., F.R.S., Dean of Chichester, &c., Chichester.

Capt. James Holt, A.D.C., &c., &c., Government House, Wellington, New Zealand.

The Right Hon. Lord Londesborough, Londesborough Lodge, Brough; 3, Grosvenor Square, London, W.

The Chevalier Michelotti, Turin.

H. G. Moore, Glenmark, New Zealand.

Sir Chas. Nicholson, Bart., D.C.L., &c., 26, Devonshire Place, Portland Place, W.

Lawrence Oliphant, F.R.S., London

Richd. Owen, M.D., D.C.L., LL.D., F.R.S., Foreign Associate of the Institute of France, &c., British Museum, London.

C. C. Oxley, Redcar.

Sir H. S. Parkes, C.B., H.M. Consul General, Jeddo, Japan.

Major-General Sir Henry Rawlinson, K.C.B., F.R.S., M.R.A.S., 21, Charles Street, Berkeley Square, London.

The Lord Bishop of Ripon, F.R.S., The Palace, Ripon.

The Most Hon. the Marquis of Ripon, K.G., F.R.S., F.G.S., Studley Royal, Ripon; 1, Carlton Gardens, London, S.W.

Sir George Gilbert Scott, R.A., F.S.A., London.

Gustave Seyffarth, A.M., D.D., Ph. D., Professor in the Concordia College, St. Louis, United States.

Rev. William Sinclair, M.A., Pulborough Rectory, Sussex.

Capt. Edmond Smyth, Elkington Hall, Louth, Lincolnshire.

John Robert Tennant, Kildwick Hall.

The Venerable Archdeacon Trollope, M.A., F.S.A., Leasingham, Lincoln.

Edward Harry Woods, Rosario, in the Argentine Republic.

Thomas Wright, M.A., F.S.A., M.R.S.L., Member of the Institute of France; Corresponding Member of the Society of Antiquaries of Copenhagen; of the Society of Antiquaries of Scotland, &c., &c.; Brompton.

PRINTED AT THE OFFICE OF THE YORKSHIRE POST, LEEDS.

LEEDS

Philosophical & Literary Society

THE ANNUAL REPORT

For 1875-76.

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Philosophical & Literary Society

THE ANNUAL REPORT

For 1875-76.

THE

FIFTY-SIXTH REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL & LITERARY

SOCIETY,

AT THE

CLOSE OF THE SESSION 1875-76.

Read at the Annual Meeting, May 2nd, 1876.

LEEDS:
PRINTED AT THE OFFICE OF THE YORKSHIRE POST.

MDCCCLXXVI.

IMPORTANT RULE

RESPECTING THE PROPERTY OF THE SOCIETY,

PASSED OCTOBER 8TH, 1860.

That in the event of a dissolution of this Society, its Property and Effects, whether real or personal, shall not be disposed of for the personal benefit of the Members, but shall be appropriated in such manner for the advancement of Science, Literature, or Art, in the town of Leeds, as shall be determined by a majority of the Members at an extraordinary Meeting to be convened for that purpose. But that no dissolution of the Society shall take place without the consent in writing of a majority holding not less than two-thirds of the Proprietary Shares.

FORM OF A BEQUEST TO THE SOCIETY.

Every person desirous of bequeathing to the Society any sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form:—

I give and bequeath to the Trustees for the time being of the Society established at Leeds, called "THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY," *for the use of the said Society, the sum of* , *to be paid out of such part of my personal Estate as I may legally charge therewith.* [Or here enumerate the Effects or Property intended to be bequeathed]. *And I direct that the Receipt of the Treasurer of the said Society for the time being, shall be an effectual discharge to my Executors for the said Legacy.*

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

FIFTY-SIXTH SESSION.

The Council report with satisfaction that the numbers of the Society's Members and Subscribers have been fully maintained during the session now ending. The following table supplies particulars for comparison with past years :—

	1874-5.	1875-6.
Original Proprietary Members (78 shares)	71	71
New Proprietary Members (120 shares)	97	97
Ordinary Members	12	13
New Ordinary Members	87	86
Annual Subscribers of £1 1s.	240	247
Annual Subscribers of 7s. 6d.	207	216
Total	714	730

There appears no good reason why a decided increase of Subscribers should not be effected, and the Council trust that their successors may hold a similar opinion, and that they will take steps to canvass for additional names.

The Society has again received a donation of £10 from Thomas Emsley, Esq., of Burley-in-Wharfedale. The President, Mr. J. I. Ikin F.R.C.S., has rendered a special service to the Society during the past year by raising, on his personal solicitations, the handsome sum of £100 as a special fund. The names of the contributors to this fund and a statement of the distribution of the

money among various departments of the Society's operations will be found in a separate balance sheet.

The Marquis of Ripon, K.G., kindly consented to deliver the opening address of the past session, in which he took a comprehensive review of the present state of education in this country. The titles of the remaining lectures and papers are given in the subjoined list :—

1. The Opening Address. The Most Hon. the Marquis of Ripon, K.G. *Oct. 21st*, 1875.
2. "Apes." Prof. St. George Mivart, F.R.S. *Read Nov. 2nd*, 1875.
3. "The Theory of Musical Instruments." Part I. Stringed Instruments. With Illustrations. W. H. Stone, M.D. *Read Nov. 16th*, 1875.
4. "The Theory of Musical Instruments." Part II. Wind Instruments. With Illustrations. W. H. Stone, M.D. *Read Nov. 23rd*, 1875.
5. "Japan and the Japanese." C. O. Shepard, late U.S. Consul at Yokohama. *Read Nov. 30th*, 1875.
6. The Conversazione. *Dec. 7th*, 1875.
7. "Spenser's Faerie Queene." Prof. Henry Morley. *Read Dec. 16th*. 1875.
8. "The Voyage of the Valorous, and the Objects of the Arctic Expedition." Clements R. Markham, C.B., F.R.S. *Read Dec. 21*, 1875.
9. "Politian and Hutten; two Renascence Sketches." Prof. A. W. Ward, M.A., Owens College, Manchester. *Read Jan. 4th*, 1876.
10. Second Lecture. Prof. A. W. Ward, M.A. *Read Jan. 11th*, 1876.
11. "Francis Bacon as a Scientific Reformer." Rev. Thomas Fowler, M.A., Professor of Logic in the University of Oxford. *Read Jan. 18th*, 1876.
12. "On the Composition of Historical Pictures and on Figure-subjects in general." Edward Armitage, R.A. *Read Jan. 25th*, 1876.

13. "Colours from Coal-tar." Sydney Lupton, M.A. *Read Feb. 1st*, 1876.
14. "Railway Safety Appliances." F. J. Bramwell, F.R.S. *Read Feb. 15th*, 1876.
15. "The Birds of the South Pacific." Rev. Canon Tristram, LL.D. F.R.S. *Read Mar. 7th*, 1876.
16. "Coinage in Ancient and Modern Times." W. Chandler Roberts, F.R.S., Chemist to the Royal Mint. *Read Mar. 21st*, 1876.

On some occasions the attendance at the lectures has been smaller than the Council could have wished, a result which must probably be ascribed to the great increase of lectures and other evening engagements in this town. The list just given is a sufficient proof that the quality of the discourses has not deteriorated, and the Council think that the average attendance at the Society's Meetings may be improved by such an increase of subscribers as that to which they have alluded.

The Annual Conversazione was held on December 7th, and was, as usual, well attended. The chief feature was the exhibition of British Pottery and Porcelain, comprising choice examples of Prehistoric, Roman and Mediæval Pottery, and of the chief modern manufactures, especially Wedgwood, Leeds, Chelsea, Derby, Worcester, and Rockingham. The principal contributors were E. O. Dykes, Esq., Thomas Eagland, Esq., F. Ferns, Esq., John Holmes, Esq., John Horsfall, Esq., G. Hird Nelson, Esq., and John Rhodes, Esq. The collections were illustrated by an address on the "The History of the Potter's Art in Britain," delivered in the Lecture Hall by Professor F. W. Rudler, of the University College of Wales. Electrical and magnetic apparatus from the Yorkshire College of Science, was exhibited and briefly explained by Prof. A. W. Rücker, M.A.

Mr W. Howgate provided a large and interesting collection of paintings, drawings, and sketches, to which the Library was allotted. Among other objects exhibited were Thomas de Colmar's arithmometer, shown by Professor Thorpe, steel breech-loading field piece (Broadwell's system), by Messrs. Greenwood & Batley; meteorological instruments, by Messrs L. J. Crossley and J. Gledhill, Halifax; spectroscopes and polariscopes, by Mr. H. Pocklington ; and toughened glass, by Messrs. Powell & Sons, London.

The interior of the Museum has received extensive repairs during the past year, the entrance hall, office, industrial museum, staircase, and geological rooms having been recoloured. The stonework of the portico being disfigured by the decay of several stones has been efficiently cleansed, and the appearance of the entrance has been considerably improved thereby. The ventilation of the lecture hall has received much attention from a Sub-committee. Acting upon information collected by this Committee, the Council have placed upon the building one of Boyle's ventilators. They have the satisfaction of believing that this alteration has maintained greater purity in the atmosphere of the lecture hall.

The following are the most noteworthy additions to the Museum. A valuable and extensive collection of British birds in admirable preservation has been presented by the representatives of the late John Heaton, Esq., through J. D. Heaton, Esq., M.D., one of the vice-presidents of the Society. A large number of British birds, selected by the officers of the Society, has been purchased by means of a liberal donation from the Mayor of Leeds (Alderman Croft.) These donations have greatly aided

the renewal now in progress of this important and popular department.

A collection of vertebrate fossils, from the Red Crag of Suffolk, has been purchased by the Council from the cabinet of the late Mr. Baker, of Woodbridge. The rarity of these fossils and the importance of the palæontological questions resting upon their interpretation, give them great value in the eyes of collectors and students. Amongst the examples procured are teeth of Mastodon arvonensis (an excellent series), Tapir, Trichechodon (an extinct Walrus), and Hipparion (an extinct equine). The Council have been assisted in making this purchase by donations from John Rhodes, Esq., and R. B. Turner, Esq. Later in the session an opportunity offered of procuring some of the rarer mollusca of the Red Crag, and the Council purchased a small but valuable series on advantageous terms.

Mr. H. B. Brady, F.R.S., has sent a series of examples of Palæozoic Foraminifera, specially valuable as having the authority of his name.

A large number of specimens of Amphioxus lanceolatus, the lowest known Vertebrate, has been presented by Dr. Anton Dohrn, of the Zoological Station at Naples. This singular animal is in all probability an example of retrogade development, of which the Ascidians represent a further stage in the same direction. The influence of the discovery of Amphioxus upon biological speculation has been very important, and it is of special interest just now to have obtained a good supply of examples. The specimens are preserved in different solutions, and are well suited for microscopical investigation.

The Rock Collection has received many additions

during the past year, but there are still important deficiencies, which cannot be readily supplied.

The dissection of the Indian Elephant has been carried on throughout the past year by the Curator and Mr. F. Greenwood, of the School of Medicine. It is of interest to notice that the simple precautions taken have entirely prevented putrefaction, and all parts of the animal are still sound and unaltered in appearance. A large series of drawings has been made, and the dissectors' notes already contain a nearly complete account of the structure of the Elephant, so far as it is to be ascertained by the ordinary processes of anatomical research. A short paper on the Venous Plexuses of the Elephant was communicated to the Biological Section of the British Association in August last, and it is hoped that a description at large will shortly appear in the publications of one of the learned Societies.

A new collection of examples of the dentition of Mammalia is in process of formation and arrangement. As yet there are many blanks in the series, which can only be supplied slowly as opportunity may offer. It is hoped that the collection may prove of special use to students of Mammalian fossils, and particularly to those engaged in the determination of bones from pleistocene deposits and ossiferous caves. Teeth are found in predominant numbers in such situations, and they furnish in most cases indubitable evidence as to zoological position, but the work of systematic comparison requires a carefully selected series of types, such as hitherto exists in no provincial museum. It is hoped that when the present collection is further advanced it may prove serviceable for the identification of the pleistocene and

post-glacial mammalia so often found in this district, as well as adapted to the wants of elementary students of zoology.

A copy of Cuvier and Laurillard's Myologie, illustrated by 330 folio plates, has been purchased in Berlin out of the President's Special Fund.

Two important additions have been made to the department of Antiquities. Among the most noteworthy objects of the recent Yorkshire Exhibition was the selection of Cyprian pottery, exhibited by Consul Sandwith, late of Crete. An opportunity occurred of purchasing from this valuable collection, and a number of vessels were secured for the Museum by a grant from the President's Special Fund. The pottery is of great antiquity, dating from several centuries before the Christian era. It is chiefly sepulchral, and interesting on account of its simplicity and the light which it throws upon the derivation of the common types of Greek vessels from such natural objects as skins, gourds, and horns. Added to a series already possessed by the Society, this recent acquisition renders our ceramic collection fairly rich in early examples. The Society has also received by donation from Mr. Edward Tindall of Bridlington an extensive and valuable collection of neolithic flint implements, a supplement to former gifts and including specimens selected from the gatherings of twenty years. Our Museum may now claim to rank high among provincial collections of prehistoric work.

The re-arrangement of the Mammalia has received attention from the Curator during the past year. The remainder of the collection has been cleaned and replaced, printed labels having been substituted for the

written ones previously in use. Three large ebonized show cases, purchased from the Yorkshire Exhibition, have been placed in the Mammalian Room. It is the present intention of the Curators of this department to use them for the display of illustrations of the dentition of Mammalia and similar special subjects.

The admissions to the Museum have exceeded those of any previous year, amounting to 51,112. This large number is no doubt partly due to the strangers brought to the town by the Yorkshire Exhibition of Arts and Manufactures, held last summer, but there is reason to believe that there is a steady increase from year to year in the number of visitors to the Museum, beyond what is due to exceptional circumstances.

An invitation from the Town Council to the British Association for the Advancement of Science, proposing that Leeds should be fixed upon at an early date as the place of meeting, was supported by a deputation from the Council of this Society. The invitation was favourably received, and will not improbably be accepted for 1878, by which time twenty years will have elapsed since the former visit of the Association to Leeds.

The Council have noticed with satisfaction the formation of a new scientific association among the members of the Society and a few gentlemen in neighbouring towns. It has adopted the title of "The Priestley Club," and holds its meetings at the Museum. Fourteen meetings have been held since October last, and at each meeting three or four papers by members of the Club have been read and discussed. Although the scope of the new association appears to be limited to the physical or natural sciences, the importance of these subjects can hardly be overrated,

whilst the mutual principle upon which the club is based constitutes a return to the system which the Philosophical and Literary Society itself adopted in the early years of its existence. The success which has attended the meetings of the Club justify the Council in regarding it as supplying a valuable stimulus to original scientific work in this town and neighbourhood.

The Council record their sense of the great loss sustained by the Society and by themselves personally in the death of Mr. Thomas Wilson, M.A., for thirteen years one of the Honorary Secretaries of the Society. Mr. Wilson's large experience in educational undertakings and never-failing zeal for their further development peculiarly fitted him for the post which he filled. As a colleague, his invariably genial disposition secured for him the warm personal regard of his fellow members of Council, who also relied upon his matured judgment and systematic thoroughness in the details of any business. Mr. Wilson had taken an active part in the educational agencies of the town for a number of years, and many fruits of his labours are now to be reckoned as secured permanently for those who follow him. To his modest and unostentatious nature this would be the most satisfactory of all rewards.

Three other names have been removed from the Society's roll, by death, during the past year, viz., Mr. William Hey, Mr. T. T. Dibb, and Dean Hook.

Mr. William Hey, F.R.C.S., was one of the oldest members of the Society, and the name of his family has ever been honourably associated with its records. He had filled the office of Vice-President, and the Museum

contains many proofs of his willingness to contribute material support to its collections.

Mr. T. T. Dibb was a valuable member of the Society. When the new building was erected, and when the present code of Rules was framed, Mr. Dibb's sound legal knowledge and good judgment were constantly referred to, and confidence was always felt in following the advice which he freely gave.

The Very Rev. Walter Farquhar Hook, D.D., F.R.S., Dean of Chichester, was one of the Society's Honorary Members. Whilst resident amongst us, as Vicar of Leeds, he filled the office of President of this Society in the year 1858, when he delivered a presidential address on the "Objects and Importance of Philosophical and Literary Institutions." Dean Hook's untiring devotion to the literary work which he had undertaken is commemorated by writings which English literature will preserve. In the town of Leeds, to which he was so much attached, and where he had exerted so powerful an influence for good, a feeling of personal esteem will long be associated with his memory.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1875.

1875.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January.	42·5 Fah.	29·681	3·511
February	36·9 „	29·922	1·287
March	40·9 „	30·025	0·479
April	48·0 „	29·882	0·498
May	55·3 „	29·797	1·456
June.	58·8 „	29·704	2·285
July	61·5 „	29·820	3·109
August	61·6 „	29·851	1·724
September.	59·0 „	29·873	2·739
October.	48·0 „	29·615	4·188
November	42·6 „	29·639	3·755
December	40·8 „	29·904	0·800

The mean monthly temperature was 49·6°.

The mean monthly height of the barometer was 29·809 inches.

The total rainfall for the year was 25·831 inches.

The greatest degree of heat, as indicated by the thermometer in the sun, was 112° on July 5, August 20 and 29; the greatest in the shade was 85° on August 16; and minimum 12° on January 1.

The greatest barometric pressure was on December 30, being 30·880 inches, the temperature of the mercury being 53°; the least pressure was on November 6, being 28·860 inches, the temperature of the mercury being 60°.

The greatest fall of rain (during 24 hours) was on October 20, being 1·315 inches.

Latitude 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the mean level of the sea, 137 feet; height of the rain-gauge above the street, 46 feet.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

STATEMENT OF RECEIPTS AND EXPENSES FOR THE YEAR 1875-6.

RECEIPTS.	£	s.	d.	£	s.	d.
To Bankers' Balance	149	8	10			
„ Curator's Ditto	13	0	10			
				162	9	8
84 New Proprietary Members, at 21*s.*	88	4	0			
60 New Ordinary Members, at 21*s.*	63	0	0			
13 Old Ordinary Members, at 42*s.*	27	6	0			
188 Old Annual Subscribers, at 21*s.*	197	8	0			
24 New Annual Subscribers, at 21*s.*	25	4	0			
158 Old Annual Subscribers, at 7*s.* 6*d.*	59	5	0			
24 New Annual Subscribers, at 7*s.* 6*d.*	9	0	0			
„ Arrears...	6	6	0			
				475	13	0
„ Rents of Cellars	63	0	0			
„ Rents of Lecture Room	168	3	0			
				231	3	0
„ Receipts for the Museum	212	19	4			
„ Receipts for the Conversazione ...	16	10	0			
				229	9	4
„ Sale of Catalogues and Descriptive Guides	2	8	8			
„ Sundries	0	10	4			
				2	19	0
„ Donations—J. Rhodes	2	0	0			
„ T. Emsley	10	0	0			
„ R. B. Turner	1	15	0			
				13	15	0
From President's Special Fund...				22	14	8
Due to Curator				0	3	0
				£1138	6	8

DISBURSEMENTS.	£	s.	d.	£	s.	d.
By Repairs	134	8	8			
„ Taxes and Rates	4	18	9			
„ Insurance	15	0	0			
„ Coals	13	18	6			
„ Gas	17	7	8			
				185	7	1
„ Salaries—Curator's	250	0	0			
„ Assistant Curator's .	54	18	6			
„ Porter's	67	12	0			
				372	10	6
„ Collections—Geological	19	8	0			
„ Zoological	60	1	6			
„ Archæological	2	10	0			
„ Library	13	16	8			
				95	16	8
„ Postages	17	8	8			
„ Printing and Advertising	107	7	5			
„ Lectures	158	18	0			
„ Conversazione...	71	11	0			
„ Commission to Collector	11	0	0			
„ Bankers' Commission	0	5	0			
„ Sundries	58	2	0			
„ Law Charges	37	13	10			
				468	18	5
„ Balance—Bankers'				88	0	6
				£1138	6	8

Examined and found correct,

FRAS. M. LUPTON,
R. B. JOWITT, } AUDITORS.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

PRESIDENT'S SPECIAL FUND, 1875-6.

SUBSCRIPTIONS RECEIVED.

	£	s.	d.
Mrs. Cunliffe Ingham (Overthorp House)	5	0	0
Mrs. Connor (Gledhow Hall)	5	0	0
The Mayor of Leeds (S. Croft, Esq.)	20	0	0
Messrs. Beckett & Co.	10	0	0
W. Aldam, Esq.	5	0	0
E. B. Wheatley Balme, Esq.	5	0	0
Messrs. Fairbairn, Kennedy, & Naylor	5	0	0
F. Darwin, Esq.	5	0	0
Messrs. W. Wms. Brown & Co.	5	0	0
Arthur Marshall, Esq.	5	0	0
Thomas Nussey, Esq.	5	0	0
F. W. Tetley, Esq.	5	0	0
Rev. T. Sheepshanks	5	0	0
Charles Wheatley, Esq.	5	0	0
James Brown, Esq., Rossington	2	2	0
William Brown, Esq., Weetwood...	2	0	0
Isaac Burkill, Esq.	2	0	0
Messrs. Boswell & Schofield	1	1	0
Mr. Tiffany	0	10	6
Miss Kemplay	1	1	0
J. I. Ikin, Esq.	1	5	6
	£100	0	0

DISBURSEMENTS.

				£	s.	d.
To Treasurer of Philosophical and Literary Society ..				22	14	8
,, Do. (Plate Glass Cases)				30	0	0
British Birds—						
Jesse Miller...	£1	17	0			
H. J. Burton	1	12	6			
Jesse Miller...	1	14	6			
J. Wardman	7	17	6			
				13	1	6
Collection of Cyprian Pottery				14	0	0
Cuvier and Laurillard's Myologie				6	6	0
Auzoux's Physiological Models				8	8	4
Curator's Expenses to London				3	0	0
Purchase of sundry Specimens				1	16	0
Postage, 3s. 6d., Cab Fares, 10s.				0	13	6
				£100	0	0

Correct,

July 21st, 1876. J. I. IKIN.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY,

1875-6.

GEOLOGY AND MINERALOGY.

A Collection of Fossils, from the Cambridge Greensand	Prof. T. Mc. K. Hughes.
A Collection of Fossils, from the Bone-bed and other Rhætic deposits of Garden Cliff	John Brigg, F.G.S.
A Collection of Mammalian Remains, from the Red Crag of Suffolk, viz.:— Mastodon arvonensis, worn and unworn molars, various forms of molar ridges, tusks; Mastodon Borsoni, molar; Hipparion, molars, section of molar; Tapirus priscus, molars; Cervus, molar; Ziphius compressus.....	Purchased.
Tusk of Trichechodon (Walrus) from the Red Crag of Suffolk	John Rhodes, and R. Bickerton Turner.
Specimens of Phosphorite and Apatite, from Estremadura.....	Purchased.
Twelve large examples of Pecten cinctus, from Tealby Series	T. W. Eagland.
Ceratodus dædaleus, from Bone-bed of Aust Passage.....	L. C. Miall.
A large Collection of Secondary Brachiopoda, viz.:— Terebratula Davidsoni; T. Fittoni; T. Montoniana; T. Prælonga; T. oblonga Rhychonella Upwarensis; R. antedichotoma; Waldheimia obovata.	J. F. Walker, M.A., F.G.S.
Sphærodus, Terebratula, Cardium, &c., from Lower Greensand, Great Brickhill, Leighton Buzzard.....	Rev. W. T. Adey.
Gryphæa dilatata, Trigonia dædalea, Belemnites abbreviatus, Crystal of Selenite, from Drift of Bedfordshire	A. W. Cook, Wellhouse School, Mirfield.
Concretions from Metamorphic Rocks—Jersey—(10 specimens).....	W. C. Swithenbank, Armley

Collection of Palæozoic Foraminifera, mounted for the Microscope, viz.:— Endothyra ammonoides, Endothyra crassa, Endothyra radiata, Endothrya ornata, Endothyra globulus, Endothyra tenuis, Endothyra Bowmanni, Valvulina plicata, Valvulina bulloides, Valvulina palæotrochus (2 specimens), Valvulina decurrens, Lituola Bennieana, Rotalia Baileyi, Climacammina antiqua, Trochammina centrifuga, Trochammina incerta, Stacheia pupoides, Nodosaria radicula	H. B. Brady, F.R.S., Newcastle-upon-Tyne.

ZOOLOGY AND BOTANY.

Collection of British Birds	Purchased.
Craticus torquatus; Coracias Abyssinica; Juida cupreocauda; Nectarina Senegalensis; Artamus bicolor; Chalcophaps Moluccensis; Yphantes Baltimore; Chlorophonia callophrys; Tanagra passerini; Dacelo Gaudichaudi; Attagis Gayi; Cissa speciosa; Ocyalus Wagleri; Cacicus citrius; Lopholaimus antarcticus; Carpophaga Novæ Zealandiæ; Noctua passerina; Mimotus Lessoni; Pteropus Ægyptiacus; Pteropus Sp.	Purchased.
British Birds, viz.:—Blackbird (2 specimens); Starling, Bullfinch, Siskin, Robin, Wren, Fieldfare, Yellow Bunting, Blue Tit (2 specimens); Cole Tit, Black Tern, Lesser Tern, Common Tern, Creeper (3 specimens); Wren (2 specimens); Swift (2 specimens); Nuthatch (2 specimens); Carrion Crow, Golden Oriole, Common Snipe, Nightingale, Hawfinch, Hedge Accentor, Rock Pipit, Alpine Accentor, Rock Thrush, White's Thrush, Woodchat Shrike, Garganey, Glaucous Gull, Great Black-backed Gull, Merlin (2 specimens); Bunting (2 specimens); Kingfisher (2 specimens); Sedge Warbler (3 specimens); Dipper, Curlew, Black-headed Bunting, Turnstone, Golden Plover, Redshank (2 specimens); Teal, Redwing, Whinchat (2 specimens); Wheatear (2 specimens); Greater Tit, Wood Lark, Meadow Pipit	Alderman Croft, Mayor of Leeds.

Redpole, Linnet	T. W. Pollard.
Hooded Crow	T. W. Stansfeld.
Eagle Owl, Snowy Owl, Marsh Harrier, Common Buzzard, Rough-legged Buzzard, Sparrow Hawk, Hoopoe, Black Grouse (2 specimens); Ptarmigan (2 specimens); Little Bittern, Red Grouse (2 specimens); Partridge (2 specimens); Red-legged Partridge, Smew, Pintail Duck, Goosander, Pochard, Scaup Duck, Tufted Duck, Kestrel (2 specimens); Great Gray Shrike (2 specimens); Merlin, Long-eared Owl, Little Owl, White Owl, Scops-eared Owl, Short-eared Owl, Tawny Owl, Hen Harrier, Ruff, Missel Thrush, Starling (2 specimens); Bohemian Wax-wing (2 specimens); Fieldfare, Red-wing, Knot, Bar-tailed Godwit (2 specimens); Redshank, Whimbrel, Turnstone, Green Sandpiper, Greenshank, Great Plover, Dotterel, Ringed Plover, Land Rail, Water Rail, Moor Hen, Magpie, Green Woodpecker, Dipper, Blackbird, Creeper, Ring Ouzel, Ring Dove, Nightjar, Wryneck, Kingfisher, Cuckoo, Jay, Golden Eye, Red-breasted Merganser, Grey Plover, Sanderling (2 specimens); Curlew Sandpiper, Purple Sandpiper, Dunlin, Stock Dove, Nutcracker, Nuthatch, Spotted Crake, Golden Plover, Red-backed Shrike ...	Representatives of the late John Heaton.
Lophophorus Impeyanus	Lieut.-Col. Henry Hamer Stansfeld, Simla.
Skulls of Sula, Recurvirostra, Gymnorhina, Thrasætus, Loxia, Numenius, and eight others	Purchased.
Feathers of Emeu	Prof. A. H. Garrod, M.A.
Young specimen of Crocodilus acutus ...	Purchased.
Amia calva (in spirit)	Purchased.
Lepidostens osseus (in spirit)	Purchased.
Skull of Camel, Hare's Skull, with deformed incisors	Purchased.
Specimens of Amphioxus lanceolatus preserved in alcohol, picric acid, and Müller's fluid	Dr. Dohrn, Zoological Station, Naples.

TECHNOLOGY.

Specimens of Wrought Iron Forgings ...	R. Coultish, Stanningley
Specimens of Brass Work, shewing stages of Watchmaking	R. Coultish, Stanningley.

ARCHÆOLOGY AND ETHNOLOGY.

Carved Tablet, with figures in high relief (13½in. by 8in.), from ruined Buddhist city near Hoti Nurdan, Peshawur district. Exhumed in 1874 by Lieut. Hare, R.E.	C. Pickard, late Raurel Pindee Gas Works, Punjaub.
Further collection of Flint Implements from Adel	Charles G. Twigg, Reformatory, Adel.
Collection of Neolithic Flint Implements from Bridlington and the neighbourhood	Edward Tindall, Bridlington.
Bow and Arrows from W. Africa	Rev. C. Edwards, Tong Parsonage.

MISCELLANEOUS.

Portrait of the late General Chesney, in chalk, by Sir John Gilbert	Bequeathed by the late William Hey.

PUBLICATIONS.

Greenwich Observations (1873)	The Astronomer Royal.
Synopsis of the Newcastle Museum, by George Townshend Fox (Newcastle, 8vo., 1827)	Rev. W. T. Adey.
Cuvier and Laurillard's Myologie, Paris, folio, 1849	President's Special Fund.
The Japanese Expedition to Formosa, by Edward H. House. Tokis, 8vo., 1875	C. O. Shephard, United States Consul, Leeds.....
Weather Charts of Meteorological Office.	E. Filliter.
Codices Syriaci de secundâ synodo Ephesina; Edited by S. G. F. Perry, M.A.	The Author, Tottington.
Circular No. 8, Report on Hygiene of U.S. Army (pamphlet) ..... Ocean Currents, pt. III. (pamphlet)	Surgeon-General U.S. War Department, Washington.
"Jeffries Wyman." (pamphlet)	Boston Society of Natural History.

Fourth Annual Report of Meteorological Office of Canada, 1874	G. F. Kingston, Superintendent Meteorological Office, Toronto.
Guide to Belfast	Belfast Naturalist Field Club.
Reliquiæ Aquitanicæ, pts. 15, 16, 17	Executors of the late Henry Christy.
Man and Apes, by Prof. St. George Mivart, F.R.S.	Purchased.
Catalogue of Oriental Coins, Vol. I	Trustees of the British Museum.
Catalogue of Marine Polyzoa in the Collection of the British Museum, Pt. III., Cyclostomata	Trustees of the British Museum.
Ancient Greek Inscriptions in British Museum, Pt. I., Attika	Trustees of the British Museum.
The Cuneiform Inscriptions of Western Asia, Vol. IV	Trustees of the British Museum.
Catalogue of the Pottery and Porcelain in the Museum of Practical Geology, by Trenham Reeks and F. W. Rudler.	Prof. F. W. Rudler.
Catalogue of Mammalian Remains from Ilford	Sir Antonio Brady.
Geological Record for 1874	Purchased.
Catalogue of the Spanish MSS. in the British Museum, by Don Pascual de Gayangos, Vol. I	Trustees of the British Museum.
Catalogue of the Additional MSS., 1854-60	Trustees of the British Museum.
Catalogue of Birds, by R. B. Sharpe, Vol. II.; Sub-order Striges	Trustees of the British Museum.
The complete Works of Count Rumford, Vol. IV	American Academy of Arts and Sciences, Boston.
Publications of the Royal Swedish Academy of Sciences at Stockholm (17 pamphlets)	The Academy.
Geology for Students, by Prof. A. H. Green, M.A.	Purchased.

Ancient Stone Implements of Great Britain, by John Evans, F.R.S.	Purchased.
Magnetical and Meteorological Observations—Cape of Good Hope—Vol. XI...	Presented by Her Majesty's Government.
Ray Society's Publications :—	
Memorials of Ray, 1844	
Reports of the Progress of Zoology and Botany, 1845	
Reports and Papers on Botany, 1845...	
Alternation of Generations, 1845	
Botanical Geography, 1846	
Reports on Zoology, 1847	
Elements of Physiophilosophy, 1847...	
Correspondence of John Ray, 1848 ...	
Bibliographia Zoologiæ, Vols. I., II., III., IV., 1848-54	Purchased.
Natural History of the British Entomostraca, 1849	
Reports and Papers on Botany, 1849...	
Monograph of the Cirripedia, Vol. I., 1851	
Angiocarpous Lichens, 1851	
Botanical and Physiological Memoirs, 1853	
Monograph of the Cirripedia, Vol. II., 1853	
Fresh Water Polyzoa, 1856.....	
Philosophical Transactions, 1775-1799....	S. Hey.
Birch's History of the Royal Society, London, 8vo.	S. Hey.
Bulletin of the U.S. Geological and Geographical Survey of the Territories ...	Dr. F. V. Hayden, State Geologist, U.S.
Revised List of the Vertebrate Animals in the Gardens of the Zoological Society	The Zoological Society.
Report of the U.S. Geological Survey of the Territories, Vol. II., Cretaceous Vertebrate, by E. D. Cope, Washington ...	Dr. F. V. Hayden, State Geologist, U.S.
Report of the U. S. Geological Survey of the Territories, Vol. VI., Cretaceous Flora, by Leo Lesquereux, Washington	Dr. F. V. Hayden, State Geologist, U.S.

PERIODICALS.

WEEKLY.

Nature	Purchased.
Leader (Australian Newspaper)	Publishers.
Australasian	Publishers.

MONTHLY.

Annals and Magazine of Natural History Geological Magazine.....	Purchased.
Illustrated Australian News	Publishers of the "Leader."
Monthly Notices of the Proceedings of the Royal Society of Tasmania (yearly) ...	Royal Society of Tasmania.
Journal of the Chemical Society	Chemical Society.
Bulletin of the Essex Institute	Essex Institute, U.S.A.
Monthly Notices of the Royal Astronomical Society.....	Royal Astronomical Society.

QUARTERLY.

Quarterly Journal of Science ..... Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society .	Geological Society.
Quarterly Returns of Marriages, Births, and Deaths.....	Registrar General.
Journal of the Royal Historical and Archæological Association of Ireland .	Royal Historical and Archæological Association of Ireland.
Journal of the Anthropological Institute .	Anthropological Institute.
Proceedings of the Geologists' Association	Geologists' Association.
Zeitschrift für Wissenschaftliche Zoologie	Purchased.
Canadian Journal of Science, Literature, and History	Canadian Institute, Toronto.

ANNUALLY.

Philosophical Transactions	Purchased.
Mineral Statistics of the United Kingdom	Director General of the Geological Survey.
Annual Report of the Yorkshire Philosophical Society	Yorkshire Philosophical Society.
Proceedings of the Glasgow Philosophical Society	Glasgow Philosophical Society.
Mittheilungen der kais. und königl. geographischen Gesellschaft in Wien	Royal Imperial Geographical Society of Vienna.
Proceedings of the Academy of Natural Sciences of Philadelphia (3 pts. a year)	Academy of Natural Sciences of Philadelphia.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Proceedings of the Royal Society of Edinburgh Transactions of do	Royal Society of Edinburgh.

Reports of the Medical and Surgical Registrars of the Middlesex Hospital.	The Hospital.
Publications of the Ray Society.....	Purchased.
Abstract of the Proceedings of the Liverpool Geological Society	Liverpool Geological Society.
Transactions of the Edinburgh Geological Society	Edinburgh Geological Society.
Kongliga Svenska Vetenskaps Akademiens Handlingar Do. do. Lefnadsteckninghar Ofversigt af Kongliga Vetenskaps Akademiens Förhandlingar.....	Royal Swedish Academy of Sciences.
Natural History Transactions of Northumberland and Durham	Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne, and Tyneside Naturalists' Field Club.
Proceedings of the Berwickshire Naturalists' Club	Berwickshire Naturalists' Club.
Proceedings of the Liverpool Literary and Philosophical Society	Liverpool Literary and Philosophical Society.
Proceedings of the Boston Society of Natural History Memoirs of do.	Boston Society of Natural History.
Transactions of the Historic Society of Lancashire and Cheshire	Historic Society of Lancashire and Cheshire.
Memoirs of the Royal Astronomical Society	Royal Astronomical Society
Greenwich Observations	Lords of the Admiralty.
Transactions and Proceedings of the New Zealand Institute	New Zealand Institute.
Proceedings of the Warwickshire Naturalists' and Archæologists' Field Club	Warwickshire Naturalists' and Archæologists' Field Club.
Annual Report and Papers of the Associated Architectural Societies	Associated Architectural Societies.
Journal and Annual Report of the Royal Institution of Cornwall	Royal Institution of Cornwall.
British Association Report	British Association.
Annual Report of the Royal Cornwall Polytechnic Society	Royal Cornwall Polytechnic Society.
Annual Report of the Smithsonian Institution	Smithsonian Institution.

Annual Report of the Warwickshire Natural History and Archæological Society	Warwickshire Natural History and Archæological Society.
Annual Report of Harvard College	The College.
Annual Report of Harvard University...	The University.
Annual Report of the U.S. Patent Office	United States Patent Office.
Annual Report of the Hull Literary and Philosophical Society	Hull Literary and Philosophical Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club	Belfast Naturalists' Field Club.
Annual Report of the Geologists' Association	Geologists' Association.
Annual Report of the Museum of Comparative Zoology at Harvard College, U.S.A.....	Museum of Harvard College, Cambridge, Mass.
Annual Report of the Birkenhead Literary and Scientific Society	Birkenhead Literary and Scientific Society.
Annual Report of the Sheffield Literary and Philosophical Society	The Society.
Yorkshire Archæological and Topographical Journal	Yorkshire Archæological and Topographical Association.
Proceedings of the Royal Society	Royal Society.
Smithsonian Miscellaneous Collections ... " Contributions to Knowledge	Smithsonian Institution.
Memoirs of the Manchester Literary and Philosophical Society .... Proceedings do. (about fortnightly, Oct. to April).....	Manchester Literary and Philosophical Society.
Journal of the Royal Dublin Society (about once a year)	Royal Dublin Society.
Proceedings of the Royal Institution (2 pts. a year).....	Royal Institution of Great Britain and Ireland.
Proceedings of the Zoological Society (3 pts. a year—May, Oct., March)	Zoological Society.
Edinburgh Astronomical Observations ...	Royal Observatory, Edinburgh.
Proceedings of the American Academy of Arts and Sciences	American Academy of Arts and Sciences.
Report of the Smithsonian Institution ...	Smithsonian Institution.
Transactions of the American Philosophical Society ..... Proceedings do. (several pts. a year)	American Philosophical Society.

Abridgments of Specifications of Patents, with Indices	Commissioner of Patents.
Transactions of the Academy of Sciences of St. Louis	The Academy of Sciences of St. Louis, U.S.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger	Royal Danish Society of Sciences.
Proceedings of the Royal Irish Academy	Royal Irish Academy.
Journal of the Royal Geological Society of Ireland	Royal Geological Society of Ireland.
Transactions of the Manchester Geological Society	Manchester Geological Society.

LIST OF OFFICERS AND COUNCIL,

1876-7.

OFFICERS.

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TREASURER.	HENRY OXLEY.
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HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN . . .	J. D. HEATON, M.D., F.R.C.P.

The above officers, with the following gentlemen, form the

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Assistant Secretary . .	W. F. HUSBAND.
Curator's Assistant . .	H. CROWTHER.

LIST OF MEMBERS AND SUBSCRIBERS,

1875-6.

** Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	Aldam, Wm., M.A.	Frickley Hall, Doncaster.
3	Armitage, Wm. James	Southgate, London, N.
4	Arthington, Robert	73, Hunslet Road.
1	Atkinson, John William.	13, Woodhouse Square.
5	Baines, Edward	St. Ann's Hill, Burley, near Leeds.
6	Barran, John, M.P.	Chapel-Allerton Hall.
20	Battye, James C.	Spring Field, Yeadon.
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Samuel	York Place.
9	Broadhead, Henry	Chapel-Allerton.
10, 11	Brown, James (2 shares)	Rossington, Doncaster.
31, 62	Brown, Samuel James (2 shares)	Loftus Hill, near Knaresborough.
13, 14	Calverley, Edmund (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	Chorley, Henry	8, Park Square.
17	Clapham, Samuel	19, Cookridge Street.
19	Coghlan, William	Oak Villa, Grosvenor Road.
21	Cudworth, John W.	52, Mount Preston.
22	Denison, William Beckett, M.P.	Meanwood Park.
28*	Dibb, Thomas Townend	
25	Eddison, John Edwin, M.D.	29, Park Square.
26	Ellershaw, John	Oakfield, Kirkstall.
27	Ellershaw, Walter	Hull.
28	Empson, Christopher	Bramhope Hall.

29	Ford, Robert Lawson .	Adel Grange.
46	George, Thomas Willington	Gledhow Grove.
33	Goodman, Benjamin .	Gledhow House.
34, 35	Gott, Rev. John, D.D. (2 shares) . . .	Woodsley House.
36-8	Gott, William Ewart (3 shares) . . .	Armley House.
61	Greenhow, Thomas Michael, M.D. . .	Newton Hall.
39	Harding, T. R. . .	St. Ann's Tower, Headingley.
40	Heaps, John William .	Terrace House, Chapeltown Road.
41	Heaps, Charles Denison .	Woodhouse Lodge, Woodhouse Lane.
42	Heaton, John Deakin, M.D., F.R.C.P. . .	Claremont, Leeds.
44	Hirst, Joseph . . .	Wharfedale Lawn, Wetherby.
45	Holt, Joseph . . .	Wedderburn House, Harrogate.
30	Horsfall, John, M.A., F.R.C.S. . . .	31, Albion Street.
24	Howgate, William . .	Park Row.
47	Ingham, Constantine .	Clarendon Place.
48	Ingham, William . .	Belmont, Chorley Lane.
49	Jowitt, John . . .	Harehills Grove, Potternewton near Leeds.
50*	Joy, William Glover.	
51	Kinnear, Thomas John, M.A.	Horsforth Hall.
52	Latimer, John . .	St. Mark's Villa, Woodhouse Lane.
55	Luccock, John Darnton .	54, North Street.
57	Lupton, Francis . .	Beechwood, Roundhay.
56	Lupton, Sydney . .	The Harehills, Roundhay Road.
58	Makins, Charles . .	17, Craven Hill, Regent's Park, London, N.W.
60	Marshall, Rev. Edmond Henry . . .	Launceston, Cornwall.
63	Marshall, Henry Cowper	Weetwood Hall.
59	Marshall, Arthur, F.G.S.	Headingley House.

64, 65*	Marshall J. G., F.G.S. (2 shares).	
67	Marshall, Victor Alexander Ernest, B.A. . .	Headingley House.
66	Marshall, R. D. . .	Cookridge Hall.
68	Nunneley, J. A., M.B. .	22, Park Place.
69	Rhodes, John . . .	Potternewton House.
70	Shepherd, John . .	Beech Grove House, Tadcaster.
77*	Smith, John Metcalfe (Trustees of)	
32	Smith, Henry Stooks .	Headingley.
71	Tatham, George . .	Springfield Mount.
72	Teale, Thomas Greenwood	Bentley House, Meanwood.
73	Teale, Mrs . . .	St. James' Lodge.
43	Tennant, Robert, M.P. .	Scarcroft Lodge, Shadwell.
74	Tottie, John William .	Coniston Hall, Bell Busk, near Skipton.
54	Waite, James Butler .	Belvidere House, New Leeds.
75	Walker, Edward . .	15, Springfield Mount.
76	Ward, William Sykes, F.C.S. . . .	Denison Hall, Hanover Square.
53	Whiteley, William .	Butt's Cottage, Armley.
78*	Wilson, Richard Bassett (Trustees of).	
12	Wilson, Rev. Benjamin .	Bank House, Mirfield.

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WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

1	Atkinson, Daniel Hopkin	16, Brunswick Place.
32	Atkinson, Edward, F.L.S., F.Z.S. . . .	Eldon House, Woodhouse Lane.
116	Baines, Frederick . .	Weetwood Lodge.
2	Balme, E. B. Wheatley .	Cote Wall, Mirfield.
95,-7 99, 100 *	Beckett, William, Trustees of (5 shares).	
15	Bilbrough, Joseph Brooks	15, Beech Grove Terrace.
3	Birchall, Edward . .	Inglemoor House, Moorland Road.

4	Boothroyd, W. . .	Grove Mill, Headingley.
88	Boswell, J. J. . . .	Althorp Villa, Spencer Place, New Leeds.
33-4, 84	Brown, S. J. (3 shares) (P)	Loftus Hill, near Knaresborough.
5-6	Brown, William (2 shares)	Bardon Grange, Weetwood.
7	Buckton, George .	Roundhay.
89	Buckton, Joshua . .	Broomhill, Moor-Allerton.
113	Burkill, Isaac Henry .	Chapeltown.
90	Butler, J. O. . . .	The Abbey House, Kirkstall.
8	Chadwick, Charles, M.D., D.C.L., F.R.C.P.	
9	Chadwick, William .	Arksey, Doncaster.
10	Cliff, Joseph . . .	Wortley.
14	Conyers, W. H. . .	Ilkley.
12, 13	*Cooper, W. J. (2 shares).	
45	Craven, John . . .	3, Beech Grove Terrace.
98	Craven, Joseph . .	Clifton House, Beeston Hill.
77	Crofts, John . . .	Adel.
17	Curwood, Capel Augustus	Cliff House.
18	*Donisthorpe, G. E.	
19	Fairbairn, Sir Andrew M.A. . , . .	GoldsboroughHall,Knaresborough.
20	Farrer, James . .	Ingleborough House, Clapham, near Lancaster.
105	Ferguson, William .	Ridge House, Woodhouse Lane.
21	Filliter, Edward, M. Inst. C.E., F.G.S. . .	West Mount, Clarendon Road.
87	Gott, Rev. John, D.D. (P)	Woodsley House.
101-110, 114-15	Gott, Wm. Ewart (P) (12 shares) . .	Armley House.
22	Hall, Thomas . .	Heath Cottage, Moor-Allerton.
23	Hargrave, James . .	Willaston House, Harrogate.
	*Hargreaves, S. B.	
16	Harvey, William . .	Bellevue Terrace.
24	Henderson, Rev. W. G., D.C.L. . . .	Grammar School,
44	Hepper, Joseph Henry.	Balks House, Wortley.
26	Hey, Samuel, F.R.C.S. .	Headingley.

117	Howarth, Rev. William Lee	Elmwood House.
36	Hudson, Henry . .	Oakwood, Roundhay.
37	Hudson, Robert John .	Moorville, Burley-in-Wharfedale.
52	Ingham, Charles Alfred .	Belmont, Chorley Lane.
38	Ingham, Henry Constantine . . .	23, Lyddon Terrace.
39	Jowitt, Robert Benson .	Elmhurst, Potternewton.
40	Joy, Walker . . .	3½, Queen Square.
41	Kennedy, Thomas Stuart	Meanwood.
43	Kitson, James . .	Elmete Hall, Roundhay.
46	Kitson, J. Hawthorne .	Hyde Terrace.
47	Kitson, James, Jun. .	Spring Bank, Headingley.
48	Kitson, Frederick William	Burley, near Leeds.
50	Leather, J. T. . .	Leventhorpe Hall.
91	Ludolf, Herman . .	Headingley.
53	Lupton, Arthur . .	Headingley.
54	Lupton, Joseph . .	The Elms, Chapel-Allerton.
55	Lupton, John . .	Moorlands, Headingley.
56	Lupton, Darnton . .	The Harehills, Roundhay Road.
57	Lupton, Francis Martineau, M.A. . .	Wellington Street.
58	March, Joseph Ogden .	Beech Grove House, Woodhouse Lane.
94	Malcolm, John Cooper .	New Leeds.
59	Margerison, J. L. . .	4, Porchester Gate, Bayswater Road, London.
25*	Marsden, H. R.	
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
61	Marshall, John, M.A. .	Headingley Lodge.
62	Marshall, Stephen Albert	Weetwood.
27	Maude, Edmund . .	Middleton Lodge, Beeston.
63	Meggeson, George . .	6, Cromer Terrace.
29*	Milner, Henry B. W. .	
64	Nickols, Richard . .	West Derby, Liverpool.
65, 66	Nicholson, Albert H. (2 shares) . . .	Woodside, Belvedere, Kent.
7	North, John . . .	East Parade.

67	Nunneley, A. G. . .	9, Beech Grove Terrace.
68	Oxley, Henry . .	Weetwood.
28	Passavant, P. W. . .	De la Haye House, Chapeltown Rd.
11	Price, William Nicholson	7, East Parade.
30	Prichard, W. . . .	Bishopgate Street.
93	Ralph, John . . .	8, Brunswick Place.
69	Reynolds, Richard, F.C.S.	Cliff Lodge, Hyde Park.
112	Sagar-Musgrave, J. M. .	Red Hall, Shadwell.
92	Scattergood, Thomas .	41, Park Square.
118	Schofield, J. C. . .	Pendleton House, Spencer Place, New Leeds.
119	Schunck, Edward. .	Adel
51, 121	Stansfeld, T. W. (2 shares)	Weetwood Grove.
70	Stewart, G. M. . .	13, Queen Square.
71*	Taylor, George . .	Buckingham House, Headingley.
72*	Taylor, Samuel.	
73	Teale, T. Pridgin, M.A., F.R.C.S. . . .	North Grange, Headingley.
74	Teasdale, Washington .	Rosehurst, Headingley.
75	Tennant, Robert, M.P. (P)	Scarcroft Lodge, Shadwell.
76	Tennant, Thomas . .	21, Blenheim Terrace.
78	Tetley, F. W. . .	Fox Hill, Weetwood.
49	Thorp, John Hall .. .	Broomfield, Headingley.
79	Turner, Richard Bickerton	Bank of England, South Parade.
80	Wailes, William . .	Harrogate.
111	Watson, William . .	Elmwood, Harrogate.
81, 82*	Whitaker, John (2 shares).	
42	Whiting, John . .	Regent Villas, Headingley.
83	Wicksteed Joseph Hartley	3, Eldon Terrace, Woodhouse Lane.
31	Wilkinson, William .	St. Mary's Mount, Newton Hill.
85	Wilson, John . . .	Seacroft Hall.
86*	Wilson, Thomas, M.A. .	
35	Wood, Richard . .	Newton Villa, Potternewton.

ORDINARY MEMBERS.

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

Armistead, Joseph John . .	Chapeltown.
Atkinson, J. H.	14, East Parade.

Buckton, Joseph	Moorland Terrace.
Bulmer, John	4, Winfield Mount, Potternewton Lane.
Cadman, William	Roundhay.
Croft, Samuel	Armley.
Garlick, William	6, Hyde Terrace.
Hewitt, E. W.	Harrogate.
Ikin, Joshua Ingham, F.R.C.S.	19, Park Place.
Martin, Samuel Dickinson	Beech Grove, Harrogate.
Ramskill, Josiah, M.R.C.S.	13, Meadow Lane.
Stratten, Rev. J. R.	Park Square.
Sykes, Henry Marshall	Roundhay

NEW ORDINARY MEMBERS.

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

Allbutt, T. Clifford, M.A., M.D., F.S.A., F.L.S.	Lyddon House, Virginia Road.
Baily, Walter, M.A.	24, Hyde Terrace.
Baines, Edward Manwaring	6, Ashwood Terrace, Headingley Hill.
Barr, Frederick Horatio	Mount View, Headingley Lane.
Barwick, J. M.	Glen View, Shipley.
Benson, John	5, Beech Grove Terrace
Best, William	18, Lyddon Terrace.
Bolland, W. T.	Hunslet Lane.
*Botterill, John.	
Bousfield, Charles Edward	St. Mary's Mount.
Briggs, Riley	Springfield Mount.
Carbutt, E. H.	Kingston Terrace.
Carter, Robert Meek	Woodhouse Lane.
Corson, George	Far Headingley.
Dawson, Edwin	Cookridge.
Denny, T. G.	18, Midland Road, Hyde Park.
Dixon, J. W.	13, Vernon Road.
Downs, T. W. A.	12, Blenheim Square.
Eddison, Frederick	The Manor, Adel.
Eddison, Robert William	Headingley.
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SOCIETY,

AT THE

CLOSE OF THE SESSION 1876-77.

Read at the Annual Meeting, May 1st, 1877.

LEEDS:
PRINTED AT THE OFFICE OF THE YORKSHIRE POST.
MDCCCLXXVII.

IMPORTANT RULE

RESPECTING THE PROPERTY OF THE SOCIETY,

PASSED OCTOBER 8TH, 1860.

That in the event of a dissolution of this Society, its Property and Effects, whether real or personal, shall not be disposed of for the personal benefit of the Members, but shall be appropriated in such manner for the advancement of Science, Literature, or Art, in the town of Leeds, as shall be determined by a majority of the Members at an extraordinary Meeting to be convened for that purpose. But that no dissolution of the Society shall take place without the consent in writing of a majority holding not less than two-thirds of the Proprietary Shares.

FORM OF A BEQUEST TO THE SOCIETY.

Every person desirous of bequeathing to the Society any sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form :—

I give and bequeath to the Trustees for the time being of the Society established at Leeds, called "THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY," *for the use of the said Society, the sum of , to be paid out of such part of my personal Estate as I may legally charge therewith.* [Or here enumerate the Effects or Property intended to be bequeathed]. *And I direct that the Receipt of the Treasurer of the said Society for the time being, shall be an effectual discharge to my Executors for the said Legacy.*

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

FIFTY-SEVENTH SESSION.

The Council have the gratification of reporting that the session which has just terminated has been marked throughout by life and energy, which have fully sustained the former reputation of the Leeds Philosophical and Literary Society; and it is believed that the fifty-seventh session will be remembered as one during which much useful work has been done.

There are two points, however, in which improvement is desirable. The Society cannot be congratulated this year either on an increase of numbers or an improved financial position. The result in each case is no doubt in part attributable to the depression of trade, which has affected this town as well as other parts of the kingdom; but the Council are of opinion that the lectures alone might have been expected to attract a larger number of Subscribers than those who have availed themselves of the advantages of the Society during the year.

The numbers, as compared with those of the previous year, stand thus:—

	1875-6.	1876-7.
Original Proprietary Members (78 shares)	71	71
New Proprietary Members (120 shares)	97	101
Ordinary Members	13	13
New Ordinary Members	86	82
Annual Subscribers of £1 1s.	247	221
Annual Subscribers of 7s. 6d.	216	221
Total	730	709

Cases have occurred of gentlemen being classed among the Subscribers of 7s. 6d. whose names ought to have appeared in the list of Subscribers of a guinea, and as there may be some misapprehension as to the rule on this subject, the Council desire to point out that the only gentlemen entitled to attend the Meetings of the Society for the smaller payment are those belonging to the family of a Member or of an Annual Subscriber of £1 1s., who reside in the same house and who are under 21 years of age. This restriction as to age does not apply to ladies.

It has been a source of encouragement to the Council to find that parents are becoming more sensible of the educational value of the Lectures and Museum, and that a larger number of the children of Members and Subscribers are availing themselves of the advantages offered under the above-mentioned rule.

The cash account, which will be found appended to this Report, shows a balance against the Society of £106 13s. 9d. An important item of annual expenditure is the sum paid for Lecturers' fees. It would, of course, be very easy to bring this amount down to a much smaller figure, but the Council believe that the important place which the lectures occupy among the proceedings of the Society demands that the best available provision should be made for them.

The handsome donation of £10 which Mr. Thos. Emsley, of Burley-in-Wharfedale, has now for several years contributed to the funds of the Society, has been renewed this year.

In the large Zoological Room a new Gallery has been erected, at a cost of upwards of £160. It was deemed advisable to endeavour to raise the funds needed for this

purpose by means of special subscriptions, and a list was accordingly opened, which up to the present time has produced £112 2s. Particulars of the donations are given in a separate account below; and it is hoped that the mere mention of the fact that nearly £60 has still to be raised towards the cost of this gallery will suffice to bring in the requisite amount from the Members and Subscribers to the Society who recognise the importance of the object. In addition to the contract price, named above, for the construction of the gallery, at least £100 should be raised towards the cost of wall-cases.

The following is a list of the Lectures delivered and Papers read before the Society during the session:—

1. Opening Address, with a Paper on "A Curious Defect in Modern Education." The President (Rev. J. H. McCheane, M.A.) *Oct. 17th*, 1876.
2. "Siberia in Europe, being Impressions of the Samoyedes." Edward Rae, F.R.G.S. *Read Oct. 31st*, 1876.
3. "The Extinct Animals of North America." W. H. Flower, F.R.S., Hunterian Professor of Comparative Anatomy, Royal College of Surgeons. *Read Nov. 7th*, 1876.
4. "The Laws of Motion, with Experimental Illustrations." R. S. Ball, LL.D., F.R.S., Professor of Astronomy, University of Dublin. *Read Nov. 21st*, 1876.
5. The Conversazione. *Nov. 28th*, 1876.
6. "The Later Geological Periods in Europe, India, South Africa, and Australia." P. M. Duncan, M.D., F.R.S., Professor of Geology, King's College, London; President of the Geological Society. *Read Dec. 5th*, 1876.
7. "The Future Work of the English Universities." J. G. Fitch, M.A. *Read Dec. 19th*, 1876.
8. "Travels in Africa." Commander Cameron, R.N., C.B. *Read Jan. 4th*, 1877.

9, 10. Christmas Lectures on Electricity, with Experiments. W. F. Barrett, F.R.S.E., Professor of Physics, Royal College of Science, Dublin. *Jan. 5th and 6th*, 1877.

11. "A Personal Narrative of the Recent Arctic Expedition." Captain A. H. Markham, R.N., C.B. *Read Jan. 16th*, 1877.
12. "Dangers to Health in our own Houses." T. Pridgin Teale, M.A., F.R.C.S. *Read Jan. 23rd*, 1877.
13. "The Life and Work of Professor Sedgwick." T. McK. Hughes, M.A., Woodwardian Professor of Geology, Cambridge, *Read Feb. 6th*, 1877.
14. "Olympia and Greek Athletics: an Account of Ancient Usages and Recent Discoveries." Sidney Colvin, M.A., Slade Professor of Fine Art, Cambridge. *Read Feb. 20th*, 1877.
15. "The Paston Letters." J. C. Morison, M.A. *Read Mar. 6th*, 1877.
16. "The Life and Poetry of Shelley." J. R. Mozley, M.A. *Read Mar. 13th*, 1877.
17. "Illustrations of the Months and Seasons in Art, with Tracings, Drawings, &c." James Fowler, F.S.A. *Read Mar. 27th*, 1877.
18. "The Moral Teaching of an Early Hindu Reformer." Henry Bowers, late Government Inspector of Schools in Madras. *Read April 3rd*, 1877.
19. "Illustrations of the Laws that regulate Muscular Work and Fatigue." Rev. Samuel Haughton, M.D., F.R.S., Professor of Geology, University of Dublin. *Read April 17th*, 1877.

The average attendance at the general meetings of the Society has been much larger than during some preceding sessions. On several occasions, indeed, the Lecture Hall was filled to its utmost capacity, notably on the 4th and 16th January, when Commander Cameron and Captain Markham gave an account of their travels. The Council have learned with satisfaction that the important lecture on the sanitary arrangements of dwellings, by our fellow-townsman, Mr. T. Pridgin Teale, has been repeated on several occasions to audiences composed chiefly of the working classes, and that the substance of it has been printed for general publication. The attendance at the

Christmas lectures for juveniles, by Professor Barrett, and the interest exhibited in them, were such as to justify a similar provision being made in succeeding years for the children of Members and Subscribers.

The necessity for presenting the sessional card at the door, before admission can be granted to the lectures, must again be mentioned, as Members have occasionally shown a disposition to treat such a regulation as irksome if not obsolete. It is clearly, however, in the interests of the Society that such a rule should be duly observed, and the doorkeeper has received strict injunctions to enforce it.

The Conversazione was held on the 28th November, 1876, and was attended by a large number of Members and Subscribers, and by more visitors than usual. The proceedings comprised a short introductory address by the President, the Rev. J. H. McCheane, M.A., and Addresses, with illustrative experiments, on "The Constitution of Matter," by Professor A. W. Rücker, M.A. (who treated of the evidence of the radiometer); and Professor T. E. Thorpe, Ph.D., F.R.S., (who dealt with that of the spectroscope). During the evening there was also an exhibition by the oxy-hydrogen light of original photographs of places in India visited by the Prince of Wales. Among the objects exhibited were steel shells, standard cylindrical gauges, and hexagonal surface plates, &c., exhibited by Sir Joseph Whitworth; Steinheil's spectroscope, Oersted's apparatus for showing the compressibility of liquids, and Despretz's apparatus for illustrating the condensibility of gases, by Professor Thorpe; models of ordnance and electrical apparatus, by Mr. L. J. Crossley, of Halifax; earthwork measuring machine, by Mr. W. H.

Barlow; engineering appliances, by Mr. H. P. Holt, C.E.; Talleron's spherometer and new optical apparatus, by Professor Rücker; mechanical models, by Professor Armstrong; Kay's railway carriage door fastener, by the Inventor; the "Sun" platen printing machine, and the type writer, shown at work, the former by Messrs. Greenwood & Batley, and the latter by Messrs. Pearson and Co.; dust figures, by Mr. J. Monckman; Zuccato's papyrograph, by Messrs. Inchbold & Beck; illustrations of painting on china, by Mons. and Mdme. Leprince; artistic work in glass, &c., by Mr. Wm. Hodgson; and wax flowers and ornamental leather work, by Miss Shipway. There was also a good exhibition of microscopes. The library, staircase, and the zoological and geological rooms were hung with oil paintings, water-colour drawings, and photographs, which formed, as usual, one of the most attractive features of the meeting. Among the contributors to this part of the exhibition were Mr. Henry Oxley, Mr. Wm. Cheetham, Mr. John C. Taylor, Mr. John Rhodes, Mr. Sagar-Musgrave, Mr. T. R. Harding, Mr. T. W. Harding, Mr. Roberts, Mr. Wagstaff, Mr. Jas. Kitson, jun., Mr. J. H. Carr, Messrs. Newton Bros., Mr. J. A. Hirst, and Mr. A. Hassé.

Allusion was made in last year's report to the invitation which had been sent from the Town Council to the British Association for the Advancement of Science, to fix upon Leeds as the place for the meeting of 1878, and the acceptance of that invitation was then described as not improbable. With the view of furthering such an arrangement a deputation from this Society was sent to the meeting of the Association at Glasgow last autumn,

but it was finally decided that the meeting in 1878 should be held in Dublin.

In the month of September, Mr. L. C. Miall, F.G.S., whose valuable services as general curator of the museum the Society has been so fortunate as to possess during the last six years, retired from the post of secretary, to which Mr. W. F. Husband was appointed. By this arrangement Mr. Miall was enabled to accept the appointment of Professor of Biology in the Yorkshire College of Science, while retaining his position as curator of the Society's museum. The Council deem this a suitable occasion for acknowledging the very efficient manner in which the general affairs of the Society have been conducted by Mr. Miall, and they especially recognise that the educational value of the museum has been greatly enhanced by the intelligence and care with which the various objects in it have been arranged by him. In consequence of this redistribution of offices, the apartment which was formerly used as a gentleman's cloak room has been fitted up as the curator's room, having direct communication with the preparing-room and upper floor of the museum.

In addition to the alterations in the museum alluded to above, an important change of system has been made in the arrangement of the objects in it.

The glazed cases have long been found unequal to the wants of the collections. In an institution which endeavours to supply instruction to the public in general, and not merely to occasional students, it seems necessary that the range of subjects should be wide. The Leeds Museum, comprising as it does antiquities, ethnology, zoology in all its branches, technology, rocks, minerals, and fossils, is perhaps over-ambitious, and may be

forced at some future time to restrict its comprehensiveness. Much may meanwhile be done to find room for increasing material without overcrowding. It would be in all respects beneficial to separate more and more typical and easily understood examples from the obscurer and minuter objects, valuable only to the close observer. An obvious way of effecting this separation would be to place a large proportion of the collections in cabinets, reserving wall cases and tables for an index collection of selected specimens. The present state of the museum permits an almost indefinite addition to our storage, though not to display cases, and want of funds has been the sole objection to pressing the purchase of cabinets during the past year. It is hoped that the officers of the Society will hereafter be able to adopt a method which promises relief from a daily-increasing pressure, together with greater facilities for special students, and which will attain these important results without diminishing the interest of the museum to chance visitors.

The new gallery, constructed upon the wall-cases in the large Zoological Room, will give a most important addition of space. It is much to be desired that the fittings implied in this alteration should be supplied early, so that the fishes, amphibia, reptiles, and British birds may be satisfactorily placed. The extension by means of a new gallery has rendered possible a change which the curators have long desired. It will be remembered that the upper rooms, in particular the large Zoological Room, have been occupied by objects too miscellaneous for any rational classification. Quadrupeds, insects, shells, corals, models of mountains and lakes, and other heterogeneous matter, have been placed according to size and shape

upon the floor. We are now enabled by the prospect of additional accommodation to reform much of this confusion, and to adopt an intelligible and nearly uniform plan. The curators have made use of this occasion to introduce a yet more considerable alteration. They have resolved to reduce the divisions of "Recent" and "Fossil" from a primary to a secondary rank, so that the natural history collections of all kinds will henceforth follow in the main the systematic classification of the naturalist, while the details only of the arrangement will rest upon the state of preservation, the size, or shape of the specimens. For the new method several advantages may be claimed. It gives a truer notion of the relations of forms of life—past and present. No reason less conclusive than that of strong practical convenience could justify us in drawing a primary line between those species which have happened to become extinct and those which still survive. Such a division is particularly inappropriate in the case of the Pleistocene fauna, which yields the bulk of our fossil mammalia, but of which a large proportion occurs also in the list of recent species. We think, further, that practical convenience will be found on the same side as theoretical fitness. The student, whether methodical or occasional, must be constantly comparing like things, and it is fatal to his objects that a fossil rhinoceros or elephant, for example, should be carried away to another room, on the mere ground of its occurrence in an ancient deposit, and there placed side by side with the scanty and inconsecutive remains of other fossil animals. Direct comparison with a perfect rhinoceros or elephant is by far the most important opportunity which a museum can offer, and this is withheld by the customary

arrangement. It will be found that the groups as now placed in our museum will coincide fairly well with the fields of study selected by the specialist. Students of such groups as fishes, crustacea or foraminifera, recent and fossil, are growing in number, while no well-advised naturalist now selects a fossil group for investigation apart from its recent allies. The current text-books and monographs, such as Huxley's "Introduction to the Classification of Animals," Peters, Carus, and Gerstaecker's "Zoologie," Woodward's "Mollusca," Davidson's "Brachiopoda," Owen's "Comparative Anatomy," and a score of others, follow the plan now recommended. It may, lastly, be urged that the increasing use of the museum for teaching purposes in connection with the Yorkshire College renders it necessary to replace the somewhat hap-hazard arrangement of the past by the classification almost universally adopted by teachers. It would be too much to expect that an experiment tried on the limited scale which our present means permit should turn out in all respects satisfactory, but the curators have no misgiving as to the general improvement which will result from the changes now in progress. New table cases and stands have been required for large mammalia hitherto mounted on the tops of the wall-cases and for fossil mammalia removed from other parts of the museum. These have been procured at small cost by the conversion of old and worn-out cases. Much time and some further expense will be required to complete the rearrangement, which will not, however, we hope, be protracted beyond the next annual meeting.

The Council have to thank Dr. Clifford Allbutt, hon. curator in zoology, for an extensive series of British

beetles, and for a large number of invertebrate types, many of which are dissections which were prepared expressly for this museum by Mr. Fritsch, of Prague. Among the contributions of fossils are an important collection of nummulites, from Mr. H. B. Brady, F.R.S.; and Rhætic fossils from the Severn, presented by Mr. John Brigg. Both are supplementary to former gifts of the same kind. We have received from Messrs. Woods and J. T. Atkinson, acting on behalf of the newly-formed Natural History Society of Selby, two of the hollowed tree trunks containing human skeletons lately found at Church Hill, Selby. The hazel rods buried with the bodies seem to refer the interment to the English period, but the chronological indications are very slight. Mr. Rooke Pennington, of Bolton, has sent a valuable collection of mammalian remains, found at Windy Knoll, Castleton, and promises a collection of flint implements and bones from the newly-discovered caves of Cresswell Crags, Derbyshire.

The full list of donations appended to this report will show that the acquisitions of the past year are numerous and valuable. We find no diminution either in the liberality or the energy of the friends of the Society, and our chief anxiety is that the capacity of the museum may keep pace with the steady increase of the collections.

The industrial museum has been cleaned and re-arranged during the year. A new classification has been introduced, and printed labels have been supplied throughout.

The number of admissions to the museum during the year was 37,383 as against 51,112 in 1875-6. In that session, however, the admissions were raised to an

extraordinary figure by the circumstance of the Yorkshire Exhibition bringing to Leeds large numbers of strangers throughout the summer.

The Council have seen with much satisfaction the efforts made by the University Extension Committee during the past three years, under the auspices of the University of Cambridge, to promote literary education in this town. The object has in some measure been aided by this Society, by granting the use of the hall for the lectures at a reduced charge. In the same way the Council is pleased to think that the work of the Yorkshire College of Science has been facilitated, as various courses of lectures by Professor Miall have been delivered in the Society's hall, and it is believed that the museum has contributed in a very important degree to the success and practical value of those lectures. The growing importance of the Yorkshire College has been watched with considerable interest by the Council, and the decision which has recently been made to include literature as well as science in the curriculum has brought the college completely within the scope and sympathies of the Society.

The following changes have occurred in the personal constitution of the Council during the year :—Mr. W. Baily, M.A., and Mr. Sydney Lupton, M.A., have resigned office in consequence of leaving the town, and Mr. E. Filliter, M. Inst. C.E., has done the same on account of the pressure of other engagements. Prof. A. W. Rücker, M.A., has been elected in place of Mr. Baily as an honorary secretary, Prof. A. H. Green, M.A., in place of Mr. Filliter as curator in geology, and Prof. T. E. Thorpe, F.R.S., as a member of Council, in place of Mr. S. Lupton.

Upon the recommendation of the Council, a general meeting of the Society elected the following gentlemen as honorary members :—Mr. Henry Bowman Brady, F.R.S., of Gateshead, one of the highest authorities upon the foraminifera, and a frequent benefactor of the Society's museum, in which his interest commenced when a resident in Leeds for several years; and Mr. Clements R. Markham, C.B., F.R.S., editor of the Journal of the Royal Geographical Society, and well known for his personal narratives of expeditions in Africa and the Arctic Seas.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1876.

1876.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January...	39·0 Fah.	30·070	0·605
February	41·3 ,,	29·553	2·495
March	41·0 ,,	29·308	3·721
April	47·2 ,,	29·641	2·260
May	51·1 ,,	29·990	0·810
June	59·7 ,,	29·772	2·115
July	65·7 ,,	29·858	1·780
August...	63·3 ,,	29·746	1·800
September	55·2 ,,	29·596	3·180
October...	52·7 ,,	29·737	3·210
November	43·5 ,,	29·724	2·910
December	43·0 ,,	29·252	6·460

The mean monthly temperature was 50·2°.

The mean monthly height of the barometer was 29·687 inches.

The total rainfall for the year was 32·346 inches.

The greatest degree of heat, as indicated by the thermometer in the sun, was 129° on August 14th; the greatest in the shade was 92° on August 14th; and minimum 27° on January 9 and 10.

The greatest barometric pressure was on January 15th, being 30·562 inches, the temperature of the mercury being 47°; the least pressure was on December 4th, being 28·303 inches, the temperature of the mercury being 55°.

The greatest fall of rain (during 24 hours) was on October 8th, being 1·360 inches.

Latitude 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the mean level of the sea, 137 feet; height of the rain-gauge above the street, 46 feet.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

STATEMENT OF RECEIPTS AND EXPENSES FOR THE YEAR 1876-7.

RECEIPTS.	£	s.	d.	£	s.	d.
To Bankers' Balance				22	0	6
,, 83 New Proprietary Members, at 21/-	87	3	0			
,, 62 New Ordinary Members, at 21/-	65	2	0			
,, 12 Old Ordinary Members, at 42/-	25	4	0			
,, 187 Old Annual Subscribers, at 21/-	196	7	0			
,, 26 New Annual Subscribers, at 21/-	27	6	0			
,, 154 Old Annual Subscribers, at 7/6	57	15	0			
,, 51 New Annual Subscribers, at 7/6	19	2	6			
,, Arrears	1	1	0			
				479	0	6
,, Rents of Cellars	63	0	0			
,, Rents of Lecture Room	106	11	0			
				169	11	0
,, Receipts for the Museum	155	15	3			
,, Receipts for the Conversazione ...	20	15	0			
				176	10	3
,, Sale of Catalogue, &c....	2	4	3			
,, Sundries	8	10	8			
				10	14	11
,, Donation from T. Emsley, Esq. ..	...		..	10	0	0
,, Balance due Bank	...		...	106	13	9
				£974	10	11

DISBURSEMENTS.	£	s.	d.	£	s.	d.
By Due to Curator last year				0	3	0
,, Repairs	79	0	7			
,, Taxes and Rates	2	14	3			
,, Insurance	15	0	0			
,, Coals	17	7	0			
,, Gas	21	13	1			
				135	14	11
,, Salaries—Curator's	200	0	0			
,, Assistant Curator's... ...	54	12	0			
,, Porter's	71	13	0			
,, Secretary's	50	0	0			
				376	5	0
,, Collections—Zoological	24	15	6			
,, Archæological	7	18	3			
,, Library	32	0	6			
				64	14	3
,, Postages	20	11	4			
,, Printing and Advertising	63	14	7			
,, Lectures...	162	10	6			
,, Conversazione	57	19	0			
,, Commission to Collector	12	0	7			
,, Bankers' Commission	2	8	0			
,, Sundries	78	8	6			
				397	12	6
,, Balance in hand	...		...	0	1	3
				£974	10	11

Examined and found correct,
20th July, 1877.

FRAS. M. LUPTON, AUDITOR.

LIST OF SUBSCRIPTIONS

TO THE SPECIAL FUND FOR

ERECTING A GALLERY AND PROVIDING WALL-CASES

IN THE MUSEUM.

	£	s.	d.
Mr. S. J. Brown, Loftus Hill	10	10	0
Alderman Barran, M.P.	10	0	0
Mr. W. B. Denison, M.P.	10	0	0
Sir Andrew Fairbairn	10	0	0
Mr. Arthur Marshall	10	0	0
Mr. H. C. Marshall	10	0	0
Mr. Henry Oxley (Treasurer)	10	0	0
Mr. John Rhodes	10	0	0
Mr. W. Aldam	5	0	0
Dr. Clifford Allbutt	5	0	0
Mr. Walter Baily	5	0	0
Mr. Edward Baines	5	0	0
Mr. W. Brown, Weetwood	5	0	0
Mr. E. H. Carbutt	5	0	0
Mr. W. Cooke	5	0	0
Mr. E. Filliter	5	0	0
Alderman Gallsworthy (Mayor)	5	0	0
Mr. W. Garlick	5	0	0
Rev. Dr. Gott	5	0	0
Mr. T. R. Harding	5	0	0
Dr. Heaton	5	0	0
Rev. W. Lee Howarth	5	0	0
Mr. John Jowitt	5	0	0

	£	s.	d.
Mr. T. S. Kennedy	5	0	0
Mr. F. Lupton	5	0	0
Rev. J. H. McCheane (President)	5	0	0
Mr. W. N. Price	5	0	0
Mr. R. Reynolds (Hon. Secretary)	5	0	0
Mr. C. Ryder	5	0	0
Mr. E. Schunck	5	0	0
Mr. T. W. Stansfeld	5	0	0
Mr. T. Pridgin Teale	5	0	0
Mr. J. W. Tottie	5	0	0
Mr. W. Sykes Ward...	5	0	0
Mr. John Wilson, Seacroft	5	0	0
Mr. J. Latimer	3	3	0
Mr. John Marshall	3	0	0
Mr. S. L. Nussey	3	0	0
Mr. Wm. Huggon	2	2	0
Mr. J. I. Ikin	2	2	0
Mrs. Ledgard	2	2	0
Mr. John Hill	1	1	0
Mr. John Holmes	1	1	0
Prof. A. W. Rücker (Hon. Secretary)	1	1	0
Mr. F. Somers	1	1	0
Mr. J. B. Bilbrough	1	0	0
Mr. G. F. Naylor	0	10	6
Total	£236	13	6

August 31*st*, 1877.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY,

1876-7.

GEOLOGY AND MINERALOGY.

Block of Scotch Cannel Coal, from Lochore	Samuel A. Adamson.
Coal Measure Shale baked by Diorite, Atherstone; Diorite, Atherstone; Quartzite, Warwickshire Coal-field; Dolerite, Whitwich Colliery, Leicestershire; Earthy Oxide of Manganese, Atherstone; Fossils from Woolwich and Reading Series, Chatham	Prof. A. H. Green, M.A.
Polished Mountain Limestone, from Nidd Stean, near Lofthouse; Mottled Grit, from Bishop Thornton, near Ripon; Magnesian Limestone (fossiliferous), from Wormald Green	Rev. J. S. Tute, B.A., Markington, near Ripon.
Further collection of Rhætic Fossils, from the Bone-bed of Garden Cliff	J. Brigg, F.G.S., Keighley.
Cast of Polyptychodon, from Chalk of Bohemia; Arethusa Koninckii, from Silurian of Bohemia; Collection of Silurian Trilobites, from Bohemia (18 species); Cast of a new Labyrinthodont, from the Gas Coal of Bohemia	Prof. Anton Fritsch, Prag.
Torbanite or Torbane-hill Mineral.....	Rev. W. Willans.
Casts of the following Fossil Fishes, viz.:— Cochliodus contortus (2 specimens), Deltodus sublævis, Streblodus oblongus, Helodus, Gyrolepis, Prognathodus Guntheri.....	The Earl of Enniskillen, Florence Court, Enniskillen, Ireland.
Nummulina intermedia, Hungary; Nummulites Molli, N. Tchichatcheffi and N. Puschi, Hungary; N. Leymeriei and N. Lucasana, Bavaria	H. B. Brady, F.R.S.

Bones of Bison and other Pleistocene Mammalia, from Windy Knoll, Castleton	Rooke Pennington, LL.B., Bolton.
Bones of Hippopotamus, Bison, &c., from Raygill ; Rock Specimens from Auvergne	R. H. Tiddeman, M.A.
A Collection of Red and Coralline Crag Fossils.....	W. H. Dalton, H.M. Geological Survey.
Carpolithes ovulum, Headon, Isle of Wight	T. Scattergood.

ZOOLOGY AND BOTANY.

Apus productus, Alcyonella fungosa, Plumatella repens, Holopedium gibberum, Branchipus stagnalis	Prof. Anton Fritsch, Prag.
Goatsucker	W. Wilkinson, Newton Hill.
Swan (Cygnus olor).....	J. Ray Eddy, Carleton Grange, Skipton.
Eight "Horned Toads" (Phrynosoma cornutum) from Texas	R. H. Wood, Bean Ing Mills, Leeds.
Skin of Marmot.....	Purchased.
Collection of British Birds	Purchased.
Fresh Specimen of Ceratodus Forsteri, Queensland	Purchased.
Larva of Dytiscus, Various stages of growth and sexes of Ants, Larva of Myrmeleon, Blatta germanica, Nepa cinerea, Bostrichus typographus, Chelifer ixoides, Lycosa tarantula, Pycnogonum litorale, Squilla mantis, Branchipus stagnalis, Apus cancriformis, Limnadia tetraceros, Argulus foliaceus, Caligus gracilis, Branchiella Thini, Lernæa branchialis, Sipunculus verrucosus, Borlasia, Bonellia viridis, Strongylus armatus, Trichocephalus dispar, Echinorhynchus gigas, (male and female), Gordius aquaticus, Distoma hepaticum, Diplozoon paradoxum, Cænurus cerebralis, Vermetus gigas, Terebratula vitrea, Boltenia, Botryllus, Pyrosoma atlanta, Holuthuria (dissection), Plumatella repens, Spongilla fluviatilis, Spongia officinalis, Dunstervillia	Dr. Clifford Allbutt.

Bark of Cork Tree from St. Helena	Rev. J. G. Smith, Christ Church Vicarage, Leeds.
Series of Specimens of British Beetles, in great part supplementary to those already in the Society's possession, from the collection of the late Mr. Denny	Dr. Clifford Allbutt.
Curlew	Dr. Heaton.
Skeleton of Salamandra maculata and Carp, Skeleton of the Foot of a Horse, an Ox and a Pig, Larvæ of Pelobates fuscus (2 stages), Salamandra maculata, Proteus anguinus, Petromyzon (2 preparations), Preparations of early stages of Salmon, Injection of Tortoise.....	Purchased.
Colorado Beetle (5 specimens), from Long Branch, New Jersey, N.S.	Dr. Eddison.
Lobster, prepared so as to shew the segments and their appendages	T. W. Stansfeld. J. I. Ikin Rev. McCheane. T. Scattergood. H. B. Walker.
Locust (Pachytylus cinerascens, Fab.), caught at Armley	Israel Holdsworth, Armley.

ARCHÆOLOGY AND ETHNOLOGY.

Two coffins formed by hollowing tree-trunks, and human skeletons, from early burial-place, Church Hill, Selby.....	Messrs Woods and J. T. Atkinson, Selby.

PUBLICATIONS.

Greenwich Observations (1874)	The Astronomer Royal.
A Paper on the People of the Long Barrow Period (pamphlet) ..... An Address to the Biological Section of the British Association, 1870 ..... Ditto (pamphlet) 1875 ..... The Harveian Oration, 1873	The Author (Prof. Geo. Rolleston.)
Report of the British Association, Bristol (1875)	The Association.
Education and Culture—An Inaugural Address delivered to the Society, by the President—Rev. A. Mackennal, B.A. (pamphlet)	The Leicester Lit. and Phil. Society.

Evidences of Theriodonts in Permian Deposits Elsewhere than in South Africa (pamphlet) ..... Evidence of a Carnivorous Reptile (Cynodraco Major, Ow.) about the size of a Lion, with remarks thereon (pamphlet)	The Author (Prof. Owen, C.B)
On the Mechanics of Glaciers (pamphlet). On the Transformation of Gravity (pamphlet)	The Author, Jas. Croll.
The Anatomist's Instructor and Museum Companion, by F. I. Knox	Ed. Filliter, C.E.
Catalogue of Greek Coins, Sicily ..... Catalogue of Oriental Coins, Vol. II..... Catalogue of Sanscrit and Pali Books in the British Museum ..... Ancient Charters of the British Museum Fac-simile of an Egyptian Hieratic Papyrus of the Reign of Rameses III., now in British Museum	Trustees of the British Museum.
Graham's Chemical and Physical Researches	R. Angus Smith.
Directory of Leeds.....	McCorquodale and Co.
The Yorkshire Lias	Purchased.
Catalogue of the British Hymenoptera in the British Museum, 2nd Ed.	Trustees of the British Museum.
Mineral Map and General Statistics of New South Wales (pamphlet).....	The University, Sydney.
Dun Echt., Observatory Publications, Vol. I., A Summary or Index of the Measurements in the "Stellarium Duplicum et Multiplicum Mensuræ Micrometricæ" by Struve	Lord Lindsay.
Congrès International D'Anthropologie and D'Archéologie Préhistoriques, Vol. 1 and 2 ..... Bibliographie de L'Archéologie Préhistorique de la Suède	J. T. Kinnear, Horsforth Hall.
Experiments on the Maximum Elasticity and Density of Vapours	The Author (Alex. Morton, Glasgow.)
Weather Charts of the Meteorological Office	Purchased.
Atti della R. Accademia dei Lincei ..... Di Giovanni Eckio e della Instituzione dell' Accademia dei Lincei	The Academy.

Enumeratio Insectorum Norvegicorum:— I. Catalogum Hemipterorum et Orthopterorum Continens..... II. Catalogum Coleopterorum Continens III. „ Lepidopterorum „ Quellen zur Geschichte des Taufsymbols und der Glausbensregel	The Royale Université de Norvège à Christiania.
A Philosophical Treatise on the Nature and Constitution of Man, Vols. I. & II. The Theory of the Arts, or Art in relation to Nature, Civilization, and Man, Vols. I. and II..... Civilization considered as a Science	The Author (Geo. Harris, LL.D., F.S.A.)
On the different Styles of Pottery found in the Ancient Tombs in the Island of Cyprus	The Author (Thomas B. Sandwith.)
Narrative of the Discovery of the Central Lakes of Africa (pamphlet)	The Author (J. L. Clifford Smith, Halifax.)
Growth, Culture, and Preparation of Tea in Japan (pamphlet)	C. O. Shephard, U.S. Consul at Leeds.

PERIODICALS.

WEEKLY.

Nature.....	Purchased.
Leader (Australian Newspaper)	Publishers.
Australasian	Publishers.

MONTHLY.

Annals and Magazine of Natural History Geological Magazine.....	Purchased.
Illustrated Australian News.....	Publishers of the "Leader."
Monthly Notices of the Proceedings of the Royal Society of Tasmania (yearly) ...	Royal Society of Tasmania.
Journal of the Chemical Society	Chemical Society.
Monthly Notices of the Royal Astronomical Society	Royal Astronomical Society.

QUARTERLY.

Quarterly Journal of Science ..... Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society...	Geological Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar General.

Journal of the Royal Historical and Archæological Association of Ireland...	Royal Historical and Archæological Association of Ireland.
Journal of the Anthropological Institute..	Anthropological Institute.
Proceedings of the Geologists' Association	Geologists' Association.
Zeitschrift für Wissenschaftliche Zoologie	Purchased.
Canadian Journal of Science, Literature, and History.....	Canadian Institute, Toronto.

ANNUALLY.

Philosophical Transactions	Purchased.
Mineral Statistics of the United Kingdom	Director General of the Geological Survey.
Annual Report of the Yorkshire Philosophical Society.....	Yorkshire Philosophical Society.
Proceedings of the Glasgow Philosophical Society	Glasgow Philosophical Society.
Mittheilungen der kais. und königl. geographischen Gesellschaft in Wien	Royal Imperial Geographical Society of Vienna.
Proceedings of the Academy of Natural Sciences of Philadelphia (3 pts. a year)	Academy of Natural Sciences of Philadelphia.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Proceedings of the Royal Society of Edinburgh .... Transactions of do	Royal Society of Edinburgh.
Bulletin of the Essex Institute.....	Essex Institute, U.S.A.
Publications of the Ray Society	Purchased.
Abstract of the Proceedings of the Liverpool Geological Society	Liverpool Geological Society.
Transactions of the Edinburgh Geological Society	Edinburgh Geological Society.
Kongliga Svenska Vetenskaps Akademiens Handlingar Do. do Lefnadsteckninghar Ofversigt af Kongliga Vetenskaps Akademiens Förhandlingar	Royal Swedish Academy of Sciences.
Natural History Transactions of Northumberland and Durham	Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne, and Tyneside Naturalists' Field Club.

Proceedings of the Berwickshire Naturalists' Club	Berwickshire Naturalists' Club.
Proceedings of the Liverpool Literary and Philosophical Society	Liverpool Literary and Philosophical Society.
Proceedings of the Boston Society of Natural History Memoirs of do.	Boston Society of Natural History.
Transactions of the Historic Society of Lancashire and Cheshire	Historic Society of Lancashire and Cheshire.
Memoirs of the Royal Astronomical Society	Royal Astronomical Society
Transactions and Proceedings of the New Zealand Institute	New Zealand Institute.
Proceedings of the Warwickshire Naturalists' and Archæologists' Field Club	Warwickshire Naturalists' and Archæologists' Field Club.
Annual Report and Papers of the Associated Architectural Societies	Associated Architectural Societies.
Journal and Annual Report of the Royal Institution of Cornwall	Royal Institution of Cornwall.
British Association Report	British Association.
Annual Report of the Royal Cornwall Polytechnic Society	Royal Cornwall Polytechnic Society.
Annual Report of the Smithsonian Institution	Smithsonian Institution.
Annual Report of the Warwickshire Natural History and Archæological Society	Warwickshire Natural History and Archæological Society.
Annual Report of Harvard College	The College.
Annual Report of Harvard University...	The University.
Annual Report of the U.S. Patent Office	United States Patent Office.
Annual Report of the Hull Literary and Philosophical Society	Hull Literary and Philosophical Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club	Belfast Naturalists' Field Club.
Annual Report of the Geologists' Association	Geologists' Association.
Annual Report of the Museum of Comparative Zoology at Harvard College, U.S.A.....	Museum of Harvard College, Cambridge, Mass.
Annual Report of the Birkenhead Literary and Scientific Society.	Birkenhead Literary and Scientific Society.

Annual Report of the Sheffield Literary and Philosophical Society	Sheffield Literary and Philosophical Society.
Yorkshire Archæological and Topographical Journal	Yorkshire Archæological and Topographical Association.
Proceedings of the Royal Society	Royal Society.
Smithsonian Miscellaneous Collections ... " Contributions to Knowledge	Smithsonian Institution.
Memoirs of the Manchester Literary and Philosophical Society ..... Proceedings do. (about fortnightly, Oct. to April).....	Manchester Literary and Philosophical Society.
Journal of the Royal Dublin Society (about once a year)	Royal Dublin Society.
Proceedings of the Royal Institution (2 pts. a year).....	Royal Institution of Great Britain and Ireland.
Proceedings of the Zoological Society (4 pts. a year—June, Aug., Oct, April.)	Zoological Society.
Edinburgh Astronomical Observations ...	Royal Observatory, Edinburgh.
Proceedings of the American Academy of Arts and Sciences.	American Academy of Arts and Sciences.
Report of the Smithsonian Institution ...	Smithsonian Institution.
Transactions of the American Philosophical Society ..... Proceedings do. (several pts. a year)	American Philosophical Society.
Abridgments of Specifications of Patents, with Indices	Commissioner of Patents.
Transactions of the Academy of Sciences of St. Louis.....	The Academy of Sciences of St. Louis, U.S.
Oversigt over der Kongelige Danske Videnskabernes Selskabs Forhandlinger	Royal Danish Society of Sciences.
Proceedings of the Royal Irish Academy	Royal Irish Academy.
Journal of the Royal Geological Society of Ireland	Royal Geological Society of Ireland.
Transactions of the Manchester Geological Society.....	Manchester Geological Society.
Transactions of the Leicester Literary and Philosophical Society	Leicester Literary and Philosophical Society.
Constitution and Annual Report of the Leeds Naturalists' Club and Scientific Association	Leeds Naturalists' Club and Scientific Association.

LIST OF OFFICERS AND COUNCIL,

1877–8.

OFFICERS.

PRESIDENT	REV. J. H. McCHEANE, M.A.
VICE-PRESIDENTS	J. I. IKIN, F.R.C.S. T. CLIFFORD ALLBUTT, M.D., F.L.S.
TREASURER	HENRY OXLEY.
HONORARY SECRETARIES	RICHARD REYNOLDS, F.C.S. A. W. RÜCKER, M.A.
HONORARY CURATOR IN GEOLOGY	A. H. GREEN, M.A., F.G.S.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. T. CLIFFORD ALLBUTT, M.D., F.L.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN	J. D. HEATON, M.D., F.R.C.P.

The above officers, with the following gentlemen, form the

COUNCIL.

E. H. CARBUTT.	JOHN RALPH.
REV. JOHN GOTT, D.D.	T. SCATTERGOOD.
F. M. LUPTON, M.A.	T. W. STANSFELD.
JOHN MARSHALL, M.A.	T. E. THORPE, PH.D., F.R.S.
W. NICHOLSON PRICE.	W. SYKES WARD, F.C.S.

General Curator	LOUIS C. MIALL, F.G.S.
Assistant Secretary	W. F. HUSBAND.
Curator's Assistant	H. CROWTHER.

LIST OF MEMBERS AND SUBSCRIBERS,

1876–7.

* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	Aldam, Wm., M.A.	Frickley Hall, Doncaster.
3	Armitage, Wm. James	Southgate, London, N.
4	Arthington, Robert	73, Hunslet Road.
1	Atkinson, John William	13, Woodhouse Square.
5	Baines, Edward	St. Ann's Hill, Burley, near Leeds.
6	Barran, John, M.P.	Chapel-Allerton Hall.
20	Battye, James C.	Spring Field, Yeadon.
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Samuel	York Place.
9	Broadhead, Henry	Chapel-Allerton.
10, 11	*Brown, James (2 shares)	
31, 62	Brown, Samuel James (2 shares)	Loftus Hill, near Knaresborough.
13, 14	Calverley, Edmund (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	Chorley, Henry	8, Park Square.
17	Clapham, Samuel	19, Cookridge Street.
19	Coghlan, William	Oak Villa, Grosvenor Road.
21	Cudworth, John W.	52, Mount Preston.
22	Denison, William Beckett, M.P.	Meanwood Park.
23	*Dibb, Thomas Townend.	
25	Eddison, John Edwin, M.D.	29, Park Square.
26	Ellershaw, John	Oakfield, Kirkstall.
27	Ellershaw, Walter	Hull.
28	Empson, Christopher	Bramhope Hall.
29	Ford, Robert Lawson	Adel Grange.

46	George, Thomas Willington	Gledhow Grove.
33	Goodman, Benjamin	Gledhow House.
34, 35	Gott, Rev. John, D.D. (2 shares,	Woodsley House.
36–8	Gott, William Ewart (3 shares)	Armley House.
61	Greenhow, Thomas Michael, M.D.	Newton Hall.
39	Harding, T. R.	St. Ann's Tower, Headingley.
40	Heaps, John William	Park View Villas, Cowper Street, Leeds.
41	Heaps, Charles Denison	Woodhouse Lodge, Woodhouse Lane.
42	Heaton, John Deakin, M.D., F.R.C.P.	Claremont, Leeds.
44	Hirst, Joseph	Wharfedale Lawn, Wetherby.
45	Holt, Joseph	Wedderburn House, Harrogate.
30	Horsfall, John, M.A., F.R.C.S.	Hillary House.
24	Howgate, William	Park Row.
47	Ingham, Constantine	Clarendon Place.
48	Ingham, William	Belmont, Chorley Lane.
49	Jowitt, John	Harehills, Potternewton, near Leeds.
50*	Joy, William Glover.	
51	Kinnear, Thomas John, M.A.	Horsforth Hall.
52	Latimer, John	St. Mark's Villa, Woodhouse Lane.
55	Luccock, John Darnton	54, North Street.
57	Lupton, Francis	Beechwood, Roundhay.
56	Lupton, Sydney, M.A.	Harrow-on-the-Hill.
58	Makins, Charles	17, Craven Hill, Regent's Park, London, N.W.
60	Marshall, Rev. Edmond Henry	Launceston, Cornwall.
63	Marshall, Henry Cowper	Weetwood Hall.
59	Marshall, Arthur, F.G.S.	Headingley House.

64, 65*	Marshall, J. G., F.G.S., (2 shares).	
67	Marshall, Victor Alexander Ernest, B.A.	Monk Coniston, Ambleside.
66	Marshall, Reginald Dykes	Cookridge Hall.
7	North, John	East Parade.
68	Nunneley, J. A., M.B.	22, Park Place.
69	Rhodes, John	Potternewton House.
70	Shepherd, John	Beech Grove House, Tadcaster.
77*	Smith, John Metcalfe (Trustees of)	
32	Smith, Henry Stooks	Headingley.
71	Tatham, George	Springfield Mount.
72	Teale, Thomas Greenwood	Bentley House, Meanwood.
73	Teale, Mrs.	St. James' Lodge.
43	Tennant, Robert, M.P.	Scarcroft Lodge, Shadwell.
74	Tottie, John William	Coniston Hall, Bell Busk, near Skipton.
54	Waite, James Butler	Belvidere House, New Leeds.
75	Walker, Edward	15, Springfield Mount.
76	Ward, William Sykes, F.C.S.	Denison Hall, Hanover Square.
53	Whiteley, William	Butt's Cottage, Armley.
78	Wilson, Edmund	8, Osborne Terrace.
12	Wilson, Rev. Benjamin	Bank House, Mirfield.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

1	Atkinson, Daniel Hopkin	16, Brunswick Place.
32	Atkinson, Edward, F.L.S., F.Z.S.	Eldon House, Woodhouse Lane.
116	Baines, Frederick	Weetwood Lodge.
2	Balme, E. B. Wheatley	Cote Wall, Mirfield.
95,-7 99, 100 *	Beckett, William, Trustees of (5 shares).	
15	Bilbrough, Joseph Brooks	15, Beech Grove Terrace.
3	Birchall, Edward	Inglemoor House, Moorland Road.
4	Boothroyd, W.	Grove Mill, Headingley.

88	Boswell, J. J.	Althorp Villa, Spencer Place, New Leeds.
33-4, 84	Brown, S. J. (3 shares) (P)	Loftus Hill, near Knaresborough.
5-6	Brown, William (2 shares)	Bardon Grange, Weetwood.
7	Buckton, George	Roundhay.
89	Buckton, Joshua	Carr House, Meanwood.
113	Burkill, Isaac Henry	Chapeltown.
90	Butler, J. O.	The Abbey House, Kirkstall.
8	Chadwick, Charles, M.D., D.C.L., F.R.C.P.	Tunbridge Wells.
9	Chadwick, William	Arksey, Doncaster.
10	Cliff, Joseph	Wortley.
14	Conyers, W. H.	Ilkley.
12, 13*	Cooper, W. J. (2 shares).	
45	Craven, John	3, Beech Grove Terrace.
98	Craven, Joseph	Clifton House, Beeston Hill.
77	Crofts, John	Adel.
17	Curwood, Capel Augustus	Cliff House.
18*	Donisthorpe, G. E.	
19	Fairbairn, Sir Andrew, M.A.	15, Portman Square, London, W.
20	Farrer, James	Ingleborough House, Clapham, near Lancaster.
105	Ferguson, William	Ridge House, Woodhouse Lane.
21	Filliter, Edward, M. Inst. C.E., F.G.S.	West Mount, Clarendon Road.
87	Gott, Rev. John, D.D. (P)	Woodsley House.
101-3, 106-10, 114-15	Gott, Wm. Ewart (P) (10 shares)	Armley House.
22	Hall, Thomas	Heath Cottage, Moor-Allerton.
23	Hargrave, James	Willaston House, Harrogate.
120*	Hargreaves, S. B.	
16	Harvey, William	West View, North Hill Road.
24	Henderson, Rev. W. G., D.C.L.	Grammar School.
44*	Hepper, Joseph Henry	
26	Hey, Samuel, F.R.C.S.	Headingley.

104	Holroyd, James	
117	Howarth, Rev. Wm. Lee	Elmwood House.
36	Hudson, Henry .	Oakwood, Roundhay.
37	Hudson, Robert John .	Moorville, Burley-in-Wharfedale.
52	Ingham, Charles Alfred .	Belmont, Chorley Lane.
38	Ingham, Henry Constantine .	23, Lyddon Terrace.
39	Jowitt, Robert Benson .	Elmhurst.
40	Joy, Walker .	3½, Queen Square.
41	Kennedy, Thomas Stuart	Meanwood.
43	Kitson, James .	Elmete Hall, Roundhay.
46	Kitson, J. Hawthorne .	Hyde Terrace.
47	Kitson, James, Jun. .	Spring Bank, Headingley.
48	Kitson, Frederick William	Burley, near Leeds.
50	Leather, J. Towlerton .	Leventhorpe Hall.
91	Ludolf, Herman .	Headingley.
53	Lupton, Arthur .	Headingley.
54	Lupton, Joseph .	The Elms, Chapel-Allerton.
55	Lupton, John .	Moorlands, Headingley.
56	Lupton, Darnton .	The Harehills, Roundhay Road.
57	Lupton, Francis Martineau, M.A. .	Wellington Street.
58	March, Joseph Ogden .	Beech Grove House, Woodhouse Lane.
94	Malcolm, John Cooper .	New Leeds.
59	Margerison, J. L. .	4, Porchester Gate, Bayswater Road, London.
25	Marsden, Mrs. H. R. .	Avenue House, Woodhouse Lane.
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
61	Marshall, John, M.A. .	Headingley Lodge.
62	Marshall, Stephen Albert, B.A. .	Shaw Lane, Headingley.
27	Maude, Edmund .	Middleton Lodge, Beeston.
63	Meggeson, George .	6, Cromer Terrace.
29*	Milner, Henry B. W.	
64	Nickols, Richard .	West Derby, Liverpool.
65, 66	Nicholson, Albert H. (2 shares) .	Woodside, Belvedere, Kent.

67	Nunneley, A. G.	9, Beech Grove Terrace.
68	Oxley, Henry	Weetwood.
28	Passavant, P. W.	De la Haye House, Chapeltown Rd.
11	Price, William Nicholson	7, East Parade.
30*	Prichard, W.	
93	Ralph, John	8, Brunswick Place.
69	Reynolds, Richard, F.C.S.	Cliff Lodge, Hyde Park.
112	Sagar-Musgrave, J. M.	Red Hall, Shadwell.
92	Scattergood, Thomas	41, Park Square.
118	Schofield, J. C.	Pendleton House, Spencer Place, New Leeds.
119	Schunck, Edward	Gledhow Wood, Gledhow, near Leeds.
51, 121	Stansfeld, T. W. (2 shares)	Weetwood Grove.
70	Stewart, G. M.	13, Queen Square.
71*	Taylor, George	
72*	Taylor, Samuel	
73	Teale, T. Pridgin, M.A., F.R.C.S.	North Grange, Headingley.
74	Teasdale, Washington	Rosehurst, Headingley.
75	Tennant, Robert, M.P. (P)	Scarcroft Lodge, Shadwell.
76	Tennant, Thomas	21, Blenheim Terrace.
78	Tetley, F. W.	Fox Hill, Weetwood.
49	Thorp, John Hall	Broomfield, Headingley.
79	Turner, Richard Bickerton	Bank of England, South Parade.
80	Wailes, William	28, Albion Street.
111	Watson, William	Elmwood, Harrogate.
81, 82*	Whitaker, John (2 shares).	
42	Whiting, John	Regent Villas, Headingley.
83	Wicksteed, Joseph Hartley	3, Eldon Terrace, Woodhouse Lane.
31	Wilkinson, William	St. Mary's Mount, Newton Hill.
85	Wilson, John	Seacroft Hall.
86*	Wilson, Thomas, M.A.	
35	Wood, Richard	Newton Villa, Potternewton.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

Armistead, Joseph John	Chapeltown.

Atkinson, J. H.	14, East Parade.
Buckton, Joseph	Moorland Terrace.
Bulmer, John	4, Whinfield Mount, Potternewton Lane.
*Cadman, William	
Croft, Samuel	Armley.
Garlick, William	6, Hyde Terrace.
Hewitt, E. W.	Harrogate.
Ikin, Joshua Ingham, F.R.C.S	19, Park Place.
Martin, Samuel Dickinson	Beech Grove, Harrogate.
Ramskill, Josiah, M.R.C.S.	13, Meadow Lane.
Stratten, Rev. J. R.	Park Square.
Sykes, Henry Marshall	Roundhay.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

Allbutt, T. Clifford, M.A., M.D., F.S.A., F.L.S.	Lyddon House, Virginia Road.
Baines, Edward Manwaring	6, Ashwood Terrace, Headingley Hill.
Barr, Frederick Horatio	Mount View, Headingley Lane.
Barwick, J. M.	Low Hall, Yeadon.
Bedford, James	Woodhouse Cliff.
Best, William	18, Lyddon Terrace.
Bolland, W. T.	Hunslet Lane.
*Botterill, John	
Bousfield, Charles Edward	St. Mary's Mount.
Briggs, Riley	Springfield Mount.
Carbutt, E. H.	St. Ann's, Burley, near Leeds.
Carter, Robert Meek	Woodhouse Lane.
Corson, George	Headingley.
Dawson, Edwin	Cookridge.
Denny, T. G.	Victoria Road, Headingley.
Dixon, J. W.	5, Cavendish Road.
Downs, T. W. A.	12, Blenheim Square.
Eddison, Frederick	The Manor, Adel.
Eddison, Robert William	Adel.

Firth, William	Burley Wood House.
Ford, J. Rawlinson	Adel Grange.
Ford, T. B. P.	Ilkley.
Gascoigne, F. C. Trench	Parlington Park, near Garforth.
Green, Prof. A. H., M.A.	11, Hyde Park Terrace, Headingley.
*Greenwood, Thomas	
Hargrave, John	St. Ann's Lodge, Burley, near Leeds.
Hepper, John	Clareville, Headingley.
Holt, Henry Percy, C.E., F.G.S., &c.	Cavendish Road.
Holt, Joseph (P)	Wedderburn House, Harrogate.
Illingworth, William	Armley.
*Ingham, Tom	
*Irwin, Edward	
Irwell, Julius	Highfield House, Headingley.
Jackson, Rev. Edward, M.A.	9, Brunswick Place, North Street.
*Jackson, William S.	
Kempe, Arthur	29, Brunswick Terrace.
Kemplay, Miss	St. John's Place.
Lawson, Thomas	Potternewton.
Lawson, John	Bramhope.
Leather, J. W.	
Ledgard, Mrs.	Eller Close, Roundhay.
Lupton, Joseph	Armley.
Manning, H. J.	Broomhill, Chapel-Allerton.
McCheane, Rev. J. H., M.A.	Trinity Parsonage, Hyde Terrace.
March, George	Oaklands, Scarcroft.
Middleton, John William	Mount Terrace, Potternewton.
Morley, Herbert Ogle	20, Victoria Terrace.
Myers, William Beswick	13, Park Square.
Myers, W. C.	Grove House, Roundhay.
Nelson, Henry	St. John's Cottage, St. John's Road.
Nunneley, Thomas	9, Beech Grove Terrace.
Nussey, George Henry	St. Ann's Lane, Burley, near Leeds.
Nussey, Obadiah	Morley House, Headingley.
Nussey, Thomas	Virginia House, Headingley Hill.
Nussey, Samuel Leathley	Potternewton Hall.

Nussey, Peter	Spring Ville; Shaw Lane, Headingley.
*Payne, R. E.	
Peel, Mrs.	Ackworth Park, Pontefract.
Ramsbotham, S. H., M.D.	16, Park Place.
Raynar, John	37, Lyddon Terrace.
Read, Miss	Chapel-Allerton.
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*Robinson, R. H.	
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THE ANNUAL REPORT

FOR 1877-78.

De Le /

THE

FIFTY-EIGHTH REPORT

OF

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OF THE

LEEDS

PHILOSOPHICAL & LITERARY

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AT THE

CLOSE OF THE SESSION 1877-78.

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That in the event of a dissolution of this Society, its Property and Effects, whether real or personal, shall not be disposed of for the personal benefit of the Members, but shall be appropriated in such manner for the advancement of Science, Literature, or Art, in the town of Leeds, as shall be determined by a majority of the members at an extraordinary Meeting to be convened for that purpose. But that no dissolution of the Society shall take place without the consent in writing of a majority holding not less than two-thirds of the Proprietary Shares.

FORM OF A BEQUEST TO THE SOCIETY.

Every person desirous of bequeathing to the Society any sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form:—

I give and bequeath to the Trustees for the time being of the Society established at Leeds, called "THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY," *for the use of the said Society, the sum of* , *to be paid out of such part of my personal Estate as I may legally charge therewith.* [Or here enumerate the Effects or Property intended to be bequeathed]. *And I direct that the Receipt of the Treasurer of the said Society for the time being, shall be an effectual discharge to my Executors for the said Legacy.*

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

FIFTY-EIGHTH SESSION.

The pleasing duty of having to report the continued prosperity of the Society again devolves upon the Council. The number of annual subscribers has not only been kept up, but this year there is a slight increase. The attendance at the General Meetings has been satisfactory. Important additions have been made to the Museum, and the various departments of the Society's work have been efficiently sustained.

In the following statement the present number of Members and Subscribers is compared with that of last year :—

	1876-7.	1877-8.
Original Proprietary Members (78 shares)	71	71
New Proprietary Members (120 shares)	101	100
Ordinary Members	13	15
New Ordinary Members	82	84
Annual Subscribers of £1 1s.	221	225
Annual Subscribers of 7s. 6d.	221	218
Total	709	713

It is the duty of the Council to remind members that Shares lapse after the subscriptions payable in respect of them have been allowed to fall into arrear for a certain number of years, which in the case of New Proprietary Members is fixed by the rules of the Society at five years, and in that of Ordinary and New Ordinary Members at

three years. The expediency of this caution has been brought under the consideration of the Council, as they have just had to declare the forfeiture of certain shares. It is also felt that the number of subscribers, considerable though it is, might easily be made larger if those connected with the Society would make its advantages more widely known among their friends. A larger income is much needed for Museum purposes.

The Treasurer's account shows the Society to be in a better financial position than last year. The statement for for 1876-7 reported that the expenditure for the year had exceeded the income by nearly £130. During the year just ended the receipts have been about £40 more than the disbursements, and the debt to the Treasurer has thus been reduced from £106 to £64. This result has been obtained chiefly by exercising economy in the various spending departments, and is partly due to favourable receipts. One considerable item of revenue is the rent received for the use of the Lecture Hall and Library. The convenient position and other advantages of the Hall as a place for public meetings seem to be generally recognised. The Council have thought it expedient to revise the tariff of charges, and fix a somewhat higher rent for the use of the room for evening meetings. The income of the Society has again included the annual donation of £10 from Mr. Thos. Emsley, of Burley-in-Wharfedale.

The account of the Special Fund raised for providing a new gallery and wall-cases shows a surplus of £67 6s., after paying for the gallery. A further sum of at least £100 is required for the necessary cases. The thanks of the Society are due to the members and subscribers who have so readily contributed to this fund.

The Lecture Session was opened by his Grace the Archbishop of York, on the 23rd October, 1877. His Grace had kindly undertaken to lay the foundation stone of the new buildings of the Yorkshire College on the morning of that day, and the Council of this Society agreed to a request of the college that the students and others connected with that institution should have the privilege of attending the evening meeting. It was therefore necessary to secure a larger place of assembly than the Society's hall, and the Victoria Hall was accordingly engaged for the occasion. A large audience assembled to hear the Archbishop read his paper on "The Worth of Life," which has since been published by the Society by permission of his Grace. Copies of the pamphlet may still be obtained at the Museum.

The following is a list of the papers read at the general meetings of the Society :—

1. "The Worth of Life." His Grace the Archbishop of York. *Read Oct. 23rd*, 1877.
2. "Popular Russian Literature." W. R. S. Ralston. *Read Nov. 6th*, 1877.
3. "Beginning of Nerves and Nervo Systems." G. J. Romanes, M.A. *Read Nov. 20th*, 1877.
4. "The Political Geography of England." Prof. Goldwin Smith, M.A. *Read Dec. 18th*, 1877.
5. "The Telephone, with numerous Experiments." W. F. Barrett F.R.S.E., Professor of Physics in the Royal College of Science, Dublin. *Read Jan. 1st*, 1878.
6. "From Four to Eighteen—an Educational Course." Rev. Dr. Abbott, Head Master of City of London Schools. *Read Jan. 8th*, 1878.
7. "Vortex Motion, with Experimental Illustrations." Osborne Reynolds, M.A., F.R.S., Professor of Engineering, the Owens College. *Read Jan. 15th*, 1878.

8. "The Radiometer." W. Crookes, F.R.S., &c. *Read Jan. 22nd*, 1878.
9. "Rembrandt as an Etcher." Rev. C. H. Middleton, B.A. *Read Jan. 29th*, 1878.
10. "The Dead Languages—What they are, and what they are good for." John Marshall, M.A., Professor of Ancient Literature and History in the Yorkshire College. *Read Feb. 5th*, 1878.
11. "The Position of Sociology among the Sciences." J. H. Bridges, M.B. *Read Feb. 19th*, 1878.
12. "The Scottish Universities." Rev. W. Knight, Professor of Moral Philosophy, University of St. Andrews. *Read March 5th*, 1878.
13. "The Study of Architecture—its value in a System of Education." G. F. Armstrong, M.A., F.G.S., &c., Professor of Engineering in the Yorkshire College. *Read March 19th*, 1878.
14. "Cædmon, the first great Poet of England." Rev. C. Hargrove, M.A., *Read April 2nd*, 1878.
15. Tennyson's "In Memoriam." Rev. J. H. McCheane, M.A., President of the Society. *Read April 9th*, 1878.

Attention is being given to the important subjects of regulating the temperature and improving the ventilation of the Lecture Hall—matters which at times have presented some difficulty. Considerable improvement has been effected (among other ways) by diminishing the number of gas burners, care having been taken that the quantity of gas should be sufficient for the purposes of light. It is hoped that still greater improvements will be effected before the next Lecture Session.

The Conversazione took place on the 4th of December, and was attended by even a larger number of persons than usual. The principal feature was an exhibition of paintings and drawings by local artists, a large and interesting collection being secured through the kindness of the following contributors :—Mr. J. L. Adams, Mr. R. L. Adams, Mr. Thos. Ambler, Mr. E. Atkinson, Mr. J. F.

Bird, Mr. E. Booth, Mr. J. R. Bower, Mr. Jas. Briggs, Miss F. Carbutt, Mr. W. Cheetham, Mr. G. Corson, Mr. A. Dixon, Mr. Flower, Mr. J. R. Ford, Rev. Dr. Gott, Mr. T. Griffiths, Mr. Thomas Heaps, Dr. Heaton, Mrs. H. B. Hewetson, Mr. J. W. Hill, Mr. J. A. Hirst, Mr. J. Holmes, Mr. H. Inchbold, Mr. S. Ingham, Mr. W. L. Jackson, Mr. S. Jefferson, Mr. T. R. Jessop, Mr. F. Kidson, Mr. J. W. Kettlewell, Mr. Lockwood, Mrs. Manning, Mrs. Marshall, Mr. J. W. Middleton, Mr. W. Moore, Mr. John Naylor, Mr. John North, Mr. G. H. Nussey. Mr. W. Nicholson Price, Mr. John Rhodes, Mr. A. Robinson, Mr. James Roberts, Mr. J. Roebuck, Miss A. E. Simpson, Mr. H. B. Taplin, Mr. G. Taylor, Mr. W. Teesdale, Mr. F. W. Tetley, Mr. Wagstaffe, Mr. L. Wedderburn, Mr. C. G. Wheelhouse, Mr. F. Whitwell, Mr. J. J. Willson. Among the objects of interest on exhibition may be mentioned models of ships, lent by Messrs. Laird Bros., of Birkenhead; a working model of hydraulic gun loading apparatus, from Sir W. Armstrong and Co., of Newcastle; various engineering models, sent by Mr. H. R. Holt and Messrs. Whitley Partners; and chemical apparatus and rare specimens, by Mr. T. Fairley, F.R.S.E. During the evening a description of the telephone, with practical illustrations, was given; experiments were made with Galloway's apparatus, showing the passage of flame through wire; photographs of the Arctic Expedition were exhibited by the oxy-hydrogen light; the art of wood carving was exhibited by Mr. Jos. Holmes; and experiments were conducted by Mr. A. M. Worthington, M.A., of Saltaire, to show the changes of form in falling drops of liquid.

During the Session, 1877-8, several important changes

have been made in the Museum. The re-arrangement of the large Zoological Room, noticed in last year's report, has been completed. The collection of types of invertebrata has been re-arranged and partly renewed. It will be found that the insect-types are displayed in a new manner. Specimens prepared for microscopic exhibition, mostly by Mr. Enock, have been placed in the cases on a background of white glass. It is found that the structure of the limbs, wings, proboscis, antennæ, jaws, and similar appendages, which are so important in the classification of insects, can be well seen in these preparations; and it is believed that they will prove a valuable addition to the type-series previously arranged, in which the insects are shown in their natural state. The mollusca have required extensive changes. This large group has hitherto been in a confused and disorderly state; there has been no selection of examples, and no systematic labelling. A collection of British shells, subdivided into marine and land and fresh water, has been separated from the rest. It will be seen that this series is at present deficient in many species, which can be supplied without great expense, and a small grant will be requested for this purpose. The remainder of the space is allotted to a series of generic types. Progress has been slow, especially because of the necessity of printing the labels; but it will be seen that comparatively little now remains to be done. The Curator desires to point out that he has received important help in this work from Mr. H. Crowther, the Assistant-Curator, who has a good knowledge of mollusca, and has spared no pains in arranging the collection to the best advantage.

Until the wall-cases are provided, no important in-

crease of accommodation will be gained by the erection of the gallery in the large Zoological Room, but the space is meanwhile convenient for the reception of the Milner Collection of British Birds. This large and important collection, made by Sir William Milner, and long preserved at Nun-Appleton has been deposited in the Society's Museum for a period of not less than fourteen years. It contains many rare and curious birds, and is deficient only in a few of the commoner species. When it can be properly displayed for public inspection it will appear that a new and valuable opportunity is offered to local naturalists to improve their acquaintance with the birds of this country. The Honorary Curators hope shortly to submit for approval drawings and measurements of new wall-cases, and the Council will proceed with the work as fast as the funds at disposal permit. The acquisition of this new and choice collection has directed attention to the low temperature and slight dampness of parts of the walls of the large Zoological Room. A new coil of hot water pipes, extending round three sides of the room, has been laid down and connected with the heating apparatus. It is believed that this will protect the specimens from injury, and add to the comfort of visitors.

Much yet remains to be done for the extension and improvement of the Museum. Perhaps the most important of the unexecuted proposals for increasing our available space is one to which the attention of the Council and of the Members of the Society has been more than once directed. It has been already suggested that cabinets of drawers should be procured, in which a considerable part of the Society's Collections might be

put away. Specimens so lodged might be open to the examination of any visitors who specially desired to inspect them. In this way the wall and table-cases could be relieved of many objects, interesting to special students, but not to the public, which now take up much of our exhibition space; room could also be found for the proper custody and arrangement of specimens which are at present stowed away in boxes and cupboards, and altogether inaccessible to the public.

The number of visitors to the Museum during the year 1877-8 was 38,548. In the previous year the number was 37,383.

The list of Honorary Members now includes the name of his Grace the Archbishop of York, who was elected by the Society, on the recommendation of the Council, on 20th November, 1877. His Grace rendered valuable service to the Society at the opening of the Lecture Session, to which allusion has already been made.

On the other hand, the Society has during the year lost two of its honorary members by the death of Sir Geo. Gilbert Scott, R.A., F.S.A., and Mr. Thomas Wright, M.A., F.S.A., &c.

Sir George Gilbert Scott read before the Society in 1863 a paper on "Gothic Revival, the true Groundwork of Distinct Architectural Style." Our town is fortunate in the possession of fine examples of his successful application of the principle of architecture which he advocated. These are the General Infirmary and Messrs. Beckett and Company's Bank. But besides Sir Gilbert Scott's works in England—from the Martyrs' Memorial at Oxford to the St. Pancras Railway Station and Hotel, and including the restoration of a large number of our Cathedrals—his

influence upon the architecture of the period will be most honourably recorded by such works as the Church of St. Nicholas, at Hamburg.

Mr. Thos. Wright had favoured the Society by papers "On the Recent Discoveries at Uriconium, near Shrewsbury," and "On the History of Leeds before the Norman Conquest." The latter was published by the Society, and is a valuable contribution to our local archæology. Although Mr. Wright was born at Ludlow, his father was for some years previously a resident in Leeds, where he married. From the period of his University career Mr. Wright was a zealous explorer of the treasures of the University and College libraries, and whilst quite a young man he was elected a corresponding member of the French Institute. He took an active part in the formation of the Camden Society, the Percy Society, and the Shakespeare Society. He was a voluminous contributor to the Archæological and other journals, and was selected by the late Emperor Napoleon III. to translate into English his "Vie de Jules César." He was a most careful and conscientious author and editor, and it has been said of him that no Englishman of our times has intelligently treated so many different departments of literary research.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year 1877.

1877.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January...	41·5 Fah.	29·595	3·760
February	43·9 ,,	29·638	1·720
March	41·0 ,,	29·550	2·660
April	43·8 ,,	29·642	3·510
May	49·0 ,,	29·720	1·965
June	59·1 ,,	29·808	1·290
July	58·8 ,,	29·681	3·550
August	59·9 ,,	29·654	4·080
September	54·8 ,,	29·893	3·793
October...	49·4 ,,	29·774	3·165
November	45·5 ,,	29·409	2·790
December	41·9 ,,	29·801	2·610

The mean monthly temperature was 58·8°.

The mean monthly height of the barometer was 29·680 inches.

The total rainfall for the year was 34·893 inches.

The greatest degree of heat, as indicated by the thermometer in the sun, was 101° on June 18th; the greatest in the shade was 82° on June 18th; and minimum 24° on February 28th.

The greatest barometric pressure was on October 6th, being 30·592 inches, the temperature of the mercury being 59°; the least pressure was on November 29th, being 28·572 inches, the temperature of the mercury being 52°.

The greatest fall of rain (during 24 hours) was on September 14th, being 1·150 inches.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the mean level of the sea, 137 feet; height of the rain-gauge above the street, 46 feet.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

STATEMENT OF RECEIPTS AND EXPENSES FOR THE YEAR 1877-78.

RECEIPTS.	£	s.	d.	£	s.	d.
Balance in hand at beginning of year				0	1	3
74 New Proprietary Members, at 21/- ...	77	14	0			
61 New Ordinary ditto 21/- ...	64	1	0			
11 Old Ordinary ditto 42/- ...	23	2	0			
181 Old Annual Subscribers, at 21/- ...	190	1	0			
24 New ditto 21/- ...	25	4	0			
163 Old Annual Subscribers, at 7/6 ...	61	2	6			
37 New ditto 7/6 ...	13	17	6			
Arrears	19	8	6			
				474	10	6
Rents of Cellars	63	0	0			
,, of Lecture Room	200	6	0			
				263	6	0
Receipts for the Museum	160	12	4			
,, Conversazione	28	0	0			
				188	12	4
Sale of Catalogues and Descriptive Guides	1	8	3			
Sundries	2	15	9			
				4	4	0
Sale of Forfeited N.O. Shares	12	0	0			
Donation from Mr. T. Emsley	10	0	0			
				22	0	0
Balance due to Bank, April 30th, 1878 ...				64	17	2
				£1017	11	3

DISBURSEMENTS.	£	s.	d.	£	s.	d.
Balance due to Bank, May 1st, 1878				106	13	9
Repairs	42	6	4			
Taxes and Rates	5	6	2			
Insurance	15	0	0			
Coals	12	15	10			
Gas	21	11	6			
Cleaning the Hall	10	11	7			
				107	11	5
Salaries—Curator's	150	0	0			
,, Secretary's	105	15	0			
,, Assistant Curator's	53	0	0			
,, Porter's	66	8	0			
				375	3	0
Collections—Geological	11	6	3			
,, Zoological	60	18	3			
,, Archæological	6	7	0			
Library	33	16	7			
				112	8	1
Postages	21	10	3			
Printing and Advertising	75	3	3			
Lectures	96	5	10			
Conversazione	79	6	8			
Commission to Collector	10	2	4			
Bankers' Commission	4	15	0			
Sundries	25	12	4			
				312	15	8
Balance—Cash in hand	2	17	0			
,, Petty Cash	0	2	4			
				2	19	4
				£1017	11	3

Audited and found correct,

MAY 31st, 1878.

CHAS. BEEVERS.

ACCOUNT OF THE SPECIAL FUND

FOR

Providing a New Gallery and Wall Cases in Large Zoological Room.

RECEIPTS.

	£	s.	d.	£	s.	d.
Subscriptions acknowledged in last year's Report	236	16	6			
Mr. John Moxon	1	1	0			
	237	17	6			
Less Subscriptions unpaid	21	1	0			
				216	16	6
Bank interest	...			0	13	0
				£217	9	6

PAYMENTS.

	£	s.	d.
C. R. Chorley, Architect	10	10	0
J. Nelson and Sons, Iron Work	92	10	0
J. Hall Thorp, Wood Work	60	11	0
Wood and Son, Painting	4	13	6
Joseph Lindley, Plumber's Work	3	0	0
Balance at Bank, April 30th, 1878	46	5	0
	£217	9	6

Examined and found correct,

CHAS. BEEVERS.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY,

1877-8.

GEOLOGY AND MINERALOGY.

A collection of Fish Spines and Teeth, from the Mountain Limestone of Armagh; fossil Nautilus and Lithodendron, from the Mountain Limestone of Lough Erne	The Earl of Enniskillen.
Nautilus, from the Chalk, Clacton-on-Sea.....	Mr. Witting, Francis Street, New Leeds.
Collection of the following Fossil Fishes from the Lias of Lyme Regis:—Myriacanthus granulatus, Sphenonchus hamatus, Belonostomus Anningiæ, Pachycormus .... Ctenacanthus hybodoides from Coal Measures of Dalkeith	Purchased.
Ichthyosaurian Vertebra	W. H. Eagland.
Collection of Silurian Fossils (chiefly Trilobites), Fossils from Coralline Crag and Cambridge Greensand	Purchased.

ZOOLOGY.

Collection of British Birds (on deposit)...	Sir William Milner.
Rat-snakes (Ptyas mucosus), Gomphosoma radiatum, Gecko, two Toads, Crab, from collections made in China, by the late F. W. Wright	Dr. Wright, Wakefield.
Skeleton of Propithecus, Skeleton of Indris; imperfect Skeleton of Aye-aye, Skull of Lemur, two Civet-skins, all from Madagascar	Purchased
Colorado Beetles	The Rev. S. P. Lampen.

Fifty-two types of Insects, Arachnida and Myriopoda, mounted as microscopic objects	Purchased
Aplysia, Ascidians, &c.	Purchased.
Two Alligators	John Brigg, J.P., Keighley.
Alligator	Fred French, Leeds

TECHNOLOGY.

Voluta, from Egyptian Asphalt, Dragon's Blood	J. A. Hirst.
Ostrich Feather Rug	Messrs. Brown & Broadbent, Leeds.

PUBLICATIONS.

Central Lending Catalogue, Leeds Public Libraries, 1878	
Lepidoptera Heterocera in British Museum Guide to the Exhibition Rooms of the Departments of Natural History and Antiquities Catalogue of Playing and other Cards in the British Museum Catalogue of British Fossil Crustacea Catalogue of Chinese Printed Books, Manuscripts, and Drawings in Library of the British Museum Catalogue of Birds, Vol. III. Fac-similes of Ancient Charters in the British Museum, Pt. III. Catalogue of Additions to the MSS. in the British Museum, Vol. II., 1854-75. Catalogue of Ethiopic MSS. in the British Museum Catalogue of Prints and Drawings, Div. I. Satires, Vol. III., Pt. 1, 1734-1750 Catalogue of Prints and Drawings, Div. I. Vol. III., Pt. II., 1751-60 Catalogue of Oriental Coins, Vol. III. Catalogue of Greek Coins, Thrace, &c. Gigantic Land-Tortoises (living and extinct) in Collection of the British Museum Catalogue of the Spanish MSS., Vol. II.	Trustees of the British Museum.
Etudes sur lés Echinoidees, Atlas	Royal Swedish Academy of Sciences.
Principles of Animal Mechanics	The Author, the Rev. S. Haughton, F.R.S.

A new Sett of Maps, both of ancient and present Geography	Christopher Empson, Bramhope Hall
Æsop's Fables, written in Chinese by the learned Mun Mooy Seen-shang	
Wang Keaon Lioan pih, neen Chang Han, translated by Sloth.....	
Four Cases, each containing six books (Chinese)	
Two Books for MSS. Dictionary	
Geological Survey of the Northern part of the English Lake District	Her Majesty's Government.
Geological Survey of the Burnley Coal Field	
Geology of the Weald	
Geology of the London Basin.....	
Geological Survey of the Eastern End of Essex (Walton-Naze and Harwich).....	
Thorpe's Inorganic Chemistry, Vols. I. and II.....	Messrs. Collins and Co., Glasgow.
Illustrations of Insects, Order Hemiptera, sub-order Heteroptera	The Author, Townend Glover, Washington.
A History of the City of St. Paul, and the County Ramsey, Minnesota	Minnesota Historical Society, St. Paul, Minnesota.
Communications to the Monthly Meetings of the Yorkshire Philosophical Society, 1876.....	Yorkshire Philosophical Society.
Reports of the Medical and Surgical Registrars for 1875	The Middlesex Hospital.
Harrison's Sketch of the Geology of Leicester and Rutland	Leicester Philosophical and Literary Society.
A History of the Parish Church of Leeds	The Author, Major R. W. Moore, Leeds.
Progress of New South Wales	Royal Society, New South Wales.
Climate of New South Wales, Descriptive, Historical, and Tabular	
Results of Astronomical Observations made at the Royal Observatory, Cape of Good Hope, 1874.....	Lords Commissioners of the Admiralty.
Report on the preparation for, and observations of, the Transit of Venus, as seen at Roorkee and Lahore, on Dec. 8th, 1874.....	
Greenwich Observations, 1875	
Special Loan Collection of Scientific Apparatus	Science and Art Department of the Committee of Education
The History and Antiquities of the Deanery of Craven, in the County of York	Purchased.

Photographs of the Yellowstone National Park, United States	The Earl of Enniskillen, Florence Court, Enniskillen.
Six Maps of the United States Geological and Geographical Survey.....	
The Debate on the Factories and Workshops Bill; delivered in the House of Commons during Session 1878	Presented.
Huxley's Anatomy of Invertebrate Animals	Purchased.
List of the surviving members of the American Philosophical Society of Philadelphia	American Philosophical Society of Philadelphia.
Twelve Japanese Drawings, illustrative of the growth and preparation of tea	C. O. Shephard, United States Consul at Bradford.
Geological Record, 1875	Purchased.
Dun Echt., Observatory Publications, vol. II., Mauritius Expedition, 1874, Div. I.	Lord Lindsay.
Weather Charts of the Meteorological Office	Purchased.
United States Geological and Geographical Survey of Colorado and adjacent Territory, 1874	Dr. Hayden, United States Geologist, Washington.
Do. do. 1875	
Geological Survey of Indiana, 1874	
Do. do. 1875	
United States Geographical Survey of Wyoming and Contiguous Territory, 1870.....	
Annual Reports of the United States Geological Survey of the Territories, 1867-8-9	
United States Geological Survey of the Territories, VII. Ethnography and Philology of the Hidatsa Indians	
United States Geological Survey of the Territories, Vol. XI.	
United States Geological Survey, Miscellaneous Publications, VIII., Fur-bearing Animals, a Monograph of North American Mustelidæ.....	
Bulletins of the United States Geological and Geographical Survey of the Territories, Vol. III., No. 4. Vol. IV., No. 1	
Descriptive Catalogue of Photographs of North American Indians	
Preliminary Report of the Field Work of the United States Geological Survey of the Territories, 1877.....	
United States Geological Survey, Vol. VII., Tertiary Flora	

PERIODICALS.

WEEKLY.

Nature	Purchased.
Leader (Australian Newspaper)	Publishers.
Australasian	Publishers.

MONTHLY.

Annals and Magazine of Natural History Geological Magazine	Purchased.
Illustrated Australian News	Publishers of the "Leader."
Monthly Notices of the Proceedings of the Royal Society of Tasmania (yearly)	Royal Society of Tasmania.
Journal of the Chemical Society	Chemical Society.
Monthly Notices of the Royal Astronomical Society	Royal Astronomical Society.
Atti della R. Accademia dei Lincei	The Society.

QUARTERLY.

Quarterly Journal of Science Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	Geological Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar General.
Journal of the Royal Historical and Archæological Association of Ireland	Royal Historical and Archæological Association of Ireland.
Journal of the Anthropological Institute	Anthropological Institute.
Proceedings of the Geologists' Association	Geologists' Association.
Zeitschrift für Wissenschaftliche Zoologie	Purchased.
Canadian Journal of Science, Literature, and History	Canadian Institute, Toronto.

ANNUALLY.

Philosophical Transactions	Purchased.
Mineral Statistics of the United Kingdom	Director General of the Geological Survey.
Annual Report of the Yorkshire Philosophical Society	Yorkshire Philosophical Society.
Proceedings of the Glasgow Philosophical Society	Glasgow Philosophical Society.
Mittheilungen der Kais. und Königl. Geographischen Gesellschaft in Wien	Royal Imperial Geographical Society of Vienna.

Proceedings of the Academy of Natural Sciences of Philadelphia (3 pts. a year)	Academy of Natural Sciences of Philadelphia.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Proceedings of the Royal Society of Edinburgh	Royal Society of Edinburgh.
Transactions of do.	
Bulletin of the Essex Institute.....	Essex Institute, U.S.A.
Publications of the Ray Society	Purchased.
Abstract of the Proceedings of the Liverpool Geological Society	Liverpool Geological Society.
Transactions of the Edinburgh Geological Society	Edinburgh Geological Society.
Kongliga Svenska Vetenskaps Akademiens Handlingar	Royal Swedish Academy of Sciences.
Do. do Lefnadsteckninghar	
Ofversigt af Kongliga Vetenskaps Akademiens Förhandlingar	
Bihang till Kongliga Vetenskaps Akademiens Handlingar	
Natural History Transactions of Northumberland and Durham	Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne, and Tyneside Naturalists' Field Club.
Monographs of the Palæontographical Society	Purchased.
Proceedings of the Minnesota Historical Society	Minnesota Historical Society, St. Paul, Minnesota, U.S.
Annual Report of the Minnesota Historical Society	
Proceedings of the Berwickshire Naturalists' Club	Berwickshire Naturalists' Club.
Proceedings of the Liverpool Literary and Philosophical Society	Liverpool Literary and Philosophical Society.
Proceedings of the Boston Society of Natural History.....	Boston Society of Natural History.
Memoirs of do.	
Transactions of the Historic Society of Lancashire and Cheshire	Historic Society of Lancashire and Cheshire.
Memoirs of the Royal Astronomical Society	Royal Astronomical Society.
Transactions and Proceedings of the New Zealand Institute	New Zealand Institute.

Proceedings of the Warwickshire Naturalists' and Archæologists' Field Club	Warwickshire Naturalists' and Archæologists' Field Club.
Annual Report and Papers of the Associated Architectural Societies	Associated Architectural Societies.
Journal and Annual Report of the Royal Institution of Cornwall.....	Royal Institution of Cornwall.
British Association Report	British Association.
Annual Report of the Royal Cornwall Polytechnic Society	Royal Cornwall Polytechnic Society.
Annual Report of the Warwickshire Natural History and Archæological Society	Warwickshire Natural History and Archæological Society.
Annual Report of Harvard College	The College.
Annual Report of Harvard University ...	The University.
Annual Report of the U.S. Patent Office	United States Patent Office.
Annual Report of the Hull Literary and Philosophical Society	Hull Literary and Philosophical Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club	Belfast Naturalists' Field Club.
Annual Report of the Geologists' Association	Geologists' Association.
Annual Report of the Museum of Comparative Zoology at Harvard College, U.S.A.	Museum of Harvard College, Cambridge, Mass.
Annual Report of the Birkenhead Literary and Scientific Society.	Birkenhead Literary and Scientific Society.
Journal and Proceedings of the Royal Society of New South Wales.....	Royal Society, New South Wales.
Annual Report, Department of Mines, New South Wales.....	The Department, New South Wales.
Annual Report of the Sheffield Literary and Philosophical Society	Sheffield Literary and Philosophical Society.
Proceedings of the Royal Society	Royal Society.
Smithsonian Miscellaneous Collections ... ,, Contributions to Knowledge	Smithsonian Institution.
Memoirs of the Manchester Literary and Philosophical Society .... Proceedings do. (about fortnightly, Oct. to April)	Manchester Literary and Philosophical Society.
Journal of the Royal Dublin Society (about once a year)	Royal Dublin Society.

Proceedings of the Royal Institution (2 pts. a year).....	Royal Institution of Great Britain and Ireland.
Proceedings of the Zoological Society (4 pts. a year—June, Aug., Oct., April.)	Zoological Society.
Edinburgh Astronomical Observations ...	Royal Observatory, Edinburgh.
Proceedings of the American Academy of Arts and Sciences	American Academy of Arts and Sciences.
Report of the Smithsonian Institution ...	Smithsonian Institution.
Transactions of the American Philosophical Society .... Proceedings do. (several pts. a year)	American Philosophical Society.
Abridgments of Specifications of Patents, with Indices	Commissioner of Patents.
Transactions of the Academy of Sciences of St. Louis	The Academy of Sciences of St. Louis, U.S.
Oversigt over der Kongelige Danske Videnskabernes Selskabs Forhandlinger	Royal Danish Society of Sciences.
Proceedings of the Royal Irish Academy	Royal Irish Academy.
Journal of the Royal Geological Society of Ireland	Royal Geological Society of Ireland
Transactions of the Manchester Geological Society	Manchester Geological Society.
Transactions of the Leicester Literary and Philosophical Society	Leicester Literary and Philosophical Society.
Annual Report of the Leeds Naturalists' Club and Scientific Association	Leeds Naturalists' Club and Scientific Association.
Proceedings of the Yorkshire Geological and Polytechnic Society	Yorkshire Geological and Polytechnic Society.
Proceedings of the Davenport Academy of Natural Sciences	Davenport Academy of Natural Sciences, Iowa, U.S.

LIST OF OFFICERS AND COUNCIL,

1878-9.

OFFICERS.

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LIST OF MEMBERS AND SUBSCRIBERS,

1877-8.

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PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	Aldam, Wm.	Frickley Hall, Doncaster.
3	Armitage, Wm. James	Southgate, London, N.
4	Arthington, Robert	73, Hunslet Road.
1	Atkinson, John William	13, Woodhouse Square.
5	Baines, Edward	St. Ann's Hill, Burley, near Leeds.
6	Barran, John, M.P.	Chapel-Allerton Hall.
20	Battye, James C.	Spring Field, Yeadon.
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Samuel	York Place.
9	Broadhead, Henry	Chapel-Allerton.
10, 11	*Brown, James (2 shares).	
31, 62	Brown, Samuel James (2 shares)	Loftus Hill, near Knaresborough.
13, 14	Calverley, Edmund (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	*Chorley, Henry.	
17	Clapham, Samuel	4, Marlborough Terrace, Belle Vue Road.
19	*Coghlan, William.	
21	Cudworth, John W.	52, Mount Preston.
22	Denison, William Beckett, M.P.	Nun-Appleton.
23	*Dibb, Thomas Townend	
25	Eddison, John Edwin, M.D.	29, Park Square.
26	Ellershaw, John	Oakfield, Kirkstall.

27	Ellershaw, Walter	Hull.
28	Empson, Christopher	Beechwood, Sowerby Bridge.
29*	Ford, Robert Lawson.	
46	George, Thomas Willington	Gledhow Grove.
33	Goodman, Benjamin	Gledhow House.
34, 35	Gott, Rev. John, D.D. (2 shares)	Woodsley House.
36–8	Gott, William Ewart (3 shares)	Armley House.
61	Greenhow, Thomas Michael, M.D.	Newton Hall.
39	Harding, T. R.	St. Ann's Tower, Headingley.
40	Heaps, John William	Park View Villas, Cowper Street, Leeds.
41	Heaps, Charles Denison	Woodhouse Lodge, Woodhouse Lane.
42	Heaton, John Deakin, M.D., F.R.C.P.	Claremont, Leeds.
44	Hirst, Joseph	Wharfedale Lawn, Wetherby.
45	Holt, Joseph	Wedderburn House, Harrogate.
30	Horsfall, John, M.A., F.R.C.S.	Hillary House.
24	Howgate, William	Park Row.
47	Ingham, Constantine	Clarendon Place.
48	Ingham, William	Belmont, Chorley Lane.
49	Jowitt, John	Harehills, Potternewton, near Leeds.
50*	Joy, William Glover.	
51	Kinnear, Thomas John, M.A.	Horsforth Hall.
52	Latimer, John	St. Mark's Villa, Woodhouse Lane.
55	Luccock, John Darnton	54, North Street.
57	Lupton, Francis	Beechwood, Roundhay.
56	Lupton, Sydney, M.A.	Harrow-on-the-Hill.
58	Makins, Charles	17, Craven Hill, Regent's Park, London, N.W.
60	Marshall, Rev. Edmond Henry	Launceston, Cornwall.

63	Marshall, Henry Cowper	Weetwood Hall.
59	Marshall, Arthur, F.G.S.	Headingley House.
64, 65*	Marshall, J. G., F.G.S., (2 shares).	
67	Marshall, Victor Alexander Ernest, B.A.	Monk Coniston, Ambleside.
66	Marshall, Reginald Dykes	Cookridge Hall.
7	North, John	East Parade.
68	Nunneley, J. A., M.B.	22, Park Place.
69	Rhodes, John	Potternewton House.
70	Shepherd, John	Beech Grove House, Tadcaster.
77*	Smith, John Metcalfe (Trustees of).	
32	Smith, Henry Stooks	Headingley.
71	Tatham, George	Springfield Mount.
72	Teale, Thomas Greenwood	Bentley House, Meanwood.
73	Teale, Mrs.	St. James's Lodge.
43	Tennant, Robert, M.P.	Scarcroft Lodge, Shadwell.
74	Tottie, John William	Coniston Hall, Bell Busk, near Skipton.
54	Waite, James Butler	Belvidere House, New Leeds.
75	Walker, Edward	15, Springfield Mount.
76	Ward, William Sykes, F.C.S.	Denison Hall, Hanover Square.
53	Whiteley, William	Butt's Cottage, Armley.
78	Wilson, Edmund	8, Osborne Terrace.
12	Wilson, Rev. Benjamin	Bank House, Mirfield.

NEW PROPRIETARY MEMBERS.

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

1	Atkinson, Daniel Hopkin	16, Brunswick Place.
32	Atkinson, Edward, F.L.S., F.Z.S.	Eldon House, Woodhouse Lane.
116	Baines, Frederick	Weetwood Lodge.
2	Balme, E. B. Wheatley	Cote Wall, Mirfield.
95,-7 99, 100 *	Beckett, William, Trustees of (5 shares).	

15	Bilbrough, Joseph Brooks	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Road.
4	Boothroyd, W. .	Grove Mill, Headingley.
88	Boswell, J. J. .	3, Beech Grove Terrace.
33-4,84	Brown, S. J. (3 shares) (P)	Loftus Hill, near Knaresborough.
5, 6	Brown, William (2 shares)	Bardon Grange, Weetwood.
7	Buckton, George .	Roundhay.
89	Buckton, Joshua .	Carr House, Meanwood.
113	Burkill, Isaac Henry .	Chapeltown.
90	Butler, J. O. .	The Abbey House, Kirkstall.
86	Carter, J. B. .	Elm House, Potternewton.
8	Chadwick, Charles, M.D., D.C.L., F.R.C.P. .	Tunbridge Wells.
9	Chadwick, William .	Arksey, Doncaster.
10	Cliff, Joseph .	Wortley.
14	Conyers, W. H. .	Ilkley.
12, 13	*Cooper, W. J. (2 shares).	
45	Craven, John .	3, Beech Grove Terrace.
98	Craven, Joseph .	1, Beech Grove Terrace.
77	Crofts, John .	Adel.
17	Curwood, Capel Augustus	G. E. Ry., Liverpool St. Station, London, E.C.
30	*Derham, Mrs. T. S.	
18	*Donisthorpe, G. E.	
19	Fairbairn, Sir Andrew, M.A. .	15, Portman Square, London, W.
20	Farrer, James .	Ingleborough House, Clapham, near Lancaster.
105	Ferguson, William .	Ridge House, Woodhouse Lane.
21	Filliter, Edward, F.G.S. .	West Mount, Clarendon Road.
87	Gott, Rev. John, D.D. (P)	Woodsley House.
101-3, 106-10, 114-15	Gott, Wm. Ewart, (P) (10 shares) .	Armley House.
22	Hall, Thomas .	Heath Cottage, Moor Allerton.
23	Hargrave, James .	Willaston House, Harrogate.
16	Harvey, William .	West View, North Hill Road.
24	Henderson, Rev. W. G., D.C.L. .	Grammar School.

44*	Hepper, Joseph Henry.	
26	Hey, Samuel, F.R.C.S.	Headingley.
104	Holroyd, James.	
117*	Howarth, Rev. Wm. Lee.	
36	Hudson, Henry	Oakwood, Roundhay.
37	Hudson, Robert John	Moorville, Burley-in-Wharfedale.
52	Ingram, Charles Alfred	Belmont, Chorley Lane.
38	Ingham, Henry Constantine	23, Lyddon Terrace.
39	Jowitt, Robert Benson	Elmhurst.
40	Joy, Walker	1, Granville Terrace, Harrogate.
41	Kennedy, Thomas Stuart	Meanwood.
43	Kitson, James	Elmete Hall, Roundhay
46	Kitson, J. Hawthorne	Hyde Terrace.
47	Kitson, James, Jun.	Spring Bank, Headingley.
48*	Kitson, Frederick William.	
50	Leather, J. Towlerton	Leventhorpe Hall.
91*	Ludolf, Henry.	
53	Lupton, Arthur	Headingley.
54	Lupton, Joseph	The Elms, Chapel-Allerton.
55	Lupton, John	Moorlands, Headingley.
56	Lupton, Darnton	The Harehills, Roundhay Road.
57	Lupton, Francis Martineau, M.A.	Wellington Street.
58	March, Joseph Ogden	Beech Grove House, Woodhouse Lane.
94	Malcolm, John Cooper	New Leeds.
59	Margerison, J. L.	4, Porchester Gate, Bayswater Road, London.
25*	Marsden, H. R.	
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
61	Marshall, John, M.A.	Headingley Lodge.
62	Marshall, Stephen Albert, B.A.	Shaw Lane, Headingley.
27	Maude, Edmund	Middleton Lodge, Beeston.
63	Meggeson, George	6, Cromer Terrace.
29*	Milner, Henry B. W.	
64	Nickols, Richard	West Derby, Liverpool.

65, 66	Nicholson, Albert H. (2 shares)	Woodside, Belvedere, Kent.
67	Nunneley, A. G.	9, Beech Grove Terrace.
68	Oxley, Henry	Weetwood.
28	Passavant, P. W.	De la Haye House, Chapeltown Rd.
11	Price, William Nicholson	Mount Pleasant.
93	Ralph, John	8, Brunswick Place.
69	Reynolds, Richard, F.C.S.	Cliff Lodge, Hyde Park.
112	Sagar-Musgrave, J. M.	Red Hall, Shadwell.
92	Scattergood, Thomas	41, Park Square.
118	Schofield, J. C.	Pendleton House, Spencer Place, New Leeds.
119	Schunck, Edward	Gledhow Wood, Gledhow, near Leeds.
51, 121	Stansfeld, T. W. (2 shares)	Weetwood Grove.
70	Stewart, G. M.	13, Queen Square.
71*	Taylor, George.	
72*	Taylor, Samuel.	
73	Teale, T. Pridgin, M.A., F.R.C.S.	North Grange, Headingley.
74	Teasdale, Washington	Rosehurst, Headingley.
75	Tennant, Robert, M.P. (P.)	Scarcroft Lodge, Shadwell.
76	Tennant, Thomas	21, Blenheim Terrace.
78	Tetley, F. W.	Fox Hill, Weetwood.
49	Thorpe, John Hall	Broomfield, Headingley.
79	Turner, Richard Bickerton	Bank of England, South Parade.
80	Wailes, William	28, Albion Street.
111	Watson, William	Elmwood, Harrogate.
81, 82*	Whitaker, John (2 shares).	
42	Whiting, John	Regent Villas, Headingley.
83	Wicksteed, Joseph Hartley	3, Eldon Terrace, Woodhouse Lane.
31	Wilkinson, William	St. Mary's Mount, Newton Hill.
85	Wilson, John	Seacroft Hall.
35	Wood, Richard	Newton Villa, Potternewton.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

1	Armistead, Joseph John	Netherleigh, Roundhay.
2	Atkinson, J. H.	14, East Parade.

3	Buckton, Joseph	9, Porchester Square, London, W.
4	Bulmer, John	4, Whinfield Mount, Potternewton Lane.
5	Cadman, Mrs.	St. Edmund's, Cardigan Road, Headingley.
6	Croft, Samuel	Armley.
7	Garlick, William	6, Hyde Terrace.
8	Hewitt, E. W.	Harrogate.
9	Ikin, Joshua Ingham, F.R.C.S.	19, Park Place.
11	Ramskill, Josiah	13, Meadow Lane.
12	Scriven, William Clarkson	Normandy Villas, Chapeltown.
13	Stratten, Rev. J. R.	Park Square.
14	Sykes, Henry Marshall	Roundhay.
15	Wigram, Reginald	Headingley Hill.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

1	Allbutt, T. Clifford, M.A., M.D., F.S.A., F.L.S.	Lyddon House, Virginia Road.
2	Baines, Edward Manwaring	6, Ashwood Terrace, Headingley Hill.
3	Barr, Frederick Horatio	Mount View, Headingley Lane.
4	Barwick, J. M.	Low Hall, Yeadon.
5	Bedford, James	Woodhouse Cliff.
6	Benson, John	5, Beech Grove Terrace.
7	Best, William	18, Lyddon Terrace.
8	Bolland, W. T.	West Wood Mount, Scarborough.
9	*Botterill, John.	
10	Bousfield, Charles Edward	St. Mary's Mouut.
11	Briggs, Riley	Springfield Mount.
12	Carbutt, E. H.	St. Ann's, Burley, near Leeds.
13	Carter, Robert Meek	Woodhouse Lane.
14	Corson, George	Headingley.
15	Dawson, Edwin	Cookridge.
16	Denny, T. G.	Victoria Road, Headingley.
17	Dixon, J. W.	5, Cavendish Road.
18	Downs, T. W. A.	12, Blenheim Square.
19	Eddison, Frederick	The Manor, Adel.

20	Eddison, Robert William	Adel.
21	Firth, William	Burley Wood House.
22	Ford, J. Rawlinson	Shaw Lane, Headingley.
23	Ford, T. B. P.	Bentham, near Lancaster.
24	Gascoigne, F. C. Trench	Parlington Park, near Garforth.
25	Green, Prof. A. H., M.A.	14, Ashwood Villas, Headingley.
26*	Greenwood, Thomas.	
27	Hargrave, John	St. Ann's Lodge, Burley, near Leeds.
28	Hepper, John	Clareville, Headingley.
29	Holt, Henry Percy, C.E., F.G.S.	Cavendish Road.
30	Holt, Joseph (P)	Wedderburn House, Harrogate.
31	Illingworth, William	Armley.
32*	Irwin, Edward.	
33	Irwell, Julius	Highfield House, Headingley.
34	Jackson, Rev. Edward, M.A.	9, Brunswick Place, North Street.
36	Kempe, Arthur	Rose Cottage, Horsforth.
37	Kemplay, Miss	St. John's Place.
38	Lawson, Thomas	Potternewton.
39	Lawson, John	The Manor, Bramhope, Otley.
41	Ledgard, Mrs.	Eller Close, Roundhay.
42	Lupton, Joseph	Armley.
43	Manning, H. J.	Broomhill, Chapel-Allerton.
44	McCheane, Rev. J. H., M.A.	Trinity Parsonage, Hyde Terrace.
45	March, George	Oaklands, Scarcroft.
46	Middleton, John William	Mount Terrace, Potternewton.
47	Morley, Herbert Ogle	20, Victoria Terrace.
48	Myers, William Beswick	13, Park Square.
49	Myers, W. C.	Grove House, Roundhay.
50	Nelson, Henry	St. John's Cottage, St. John's Road.
51	Nunneley, Thomas	9, Beech Grove Terrace.
52	Nussey, George Henry	St. Ann's Lane, Burley, near Leeds.
53	Nussey, Obadiah	Morley House, Headingley.
54	Nussey, Thomas	Virginia House, Headingley Hill.
55	Nussey, Samuel Leathley	Potternewton Hall.
56	Nussey, Peter	Spring Ville, Shaw Lane, Headingley.
58	Peel, Mrs.	Ackworth Park, Pontefract.

59 Ramsbotham, S. H., M.D.	16, Park Place.
60 Raynar, John	Moorfield Lodge, Headingley.
61 Read, Miss	Chapel-Allerton.
62*Riley, Thomas.	
63*Robinson, R. H.	
64*Robinson, Richard.	
65 Rücker, Prof. A. W., M.A.	3, Moorland Terrace.
66 Sharpe, Miss	21, Victoria Place, Camp Road.
68 Smith, William Farrar	Hope Villa, Woodhouse Lane.
69 Smith, John Edward	9, Pancras Lane, Queen St., Cheapside, London.
70 Somers, Francis	Fountain Terrace.
71 Stables, James	Horsforth.
72 Stead, G. A.	Ashwood Villas, Headingley.
74 Temple, Rev. Henry, M.A.	St. John's Vicarage, Woodhouse Lane.
76 Thorpe, Prof. T.E., Ph.D., F.R.S.	Headingley.
77 Titley, Anthony	Manor House, Victoria Grove, Headingley.
78 Titley, T. A.	Gledhow.
79 Tottie, J. W. (P)	Coniston Hall, Bell Busk.
80*Townsley, Richard.	
82 Walker, H. B.	Headingley Hill.
83 Ward, Edmund	Denison Hall, Hanover Square.
84 Whiteley, Thomas	Blenheim Square.
85 Willson, J. J.	Newton Grove.
86*Young, John.	

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Ambler, T.	9, Park Place.
Appleyard, T. W., jun.	8, De Grey Road.
Armistead, Edwin	Albion Street.
Armstrong, Prof. G. F., M.A.	24, Hyde Terrace.
Asquith, John Robert	Bond Place.
Atkinson, Miss	Clarendon Road.
Atkinson, Law	Clarendon Road.
Atkinson, Serjt. Tindal	1, De Grey Terrace.

Barran, Charles	3, Mount Terrace, Chapel-Allerton.
Barran, John, jun.	St. Mary's Mount, Newton Hill.
Barran, A.	Chapel-Allerton Hall.
Bartholomew, W. H., C.E.	Ridge Way House.
Battye, R. C.	Newton Grove.
Battye, C.	4, King's Place, Headingley.
Beck, W. J.	9, Queen Square.
Beverley, A.	Grosvenor Terrace, Headingley.
Beverley, Robert	Woodsley Terrace.
Beverley, W. A.	Spring Road, Headingley.
Bickerdike, Rev. John, M.A.	St. Mary's Vicarage, Beckett Street, Burmantofts.
Birchall, Oswald	Ilkley.
Bland, Miss	Lilford House, Queen Square.
Braithwaite, James, M.D.	Clarendon Road.
Braithwaite, Richard Hale	Do.
Brigg, Matthew A.	Oak Bank, Headingley.
Browne, J. C.	48, Briggate.
Bruce, William	Moorland Terrace.
Buckley, J. C.	10, Blenheim Terrace.
Buckton, Richard	Wheatfield Lodge, Headingley.
Buckton, R., jun.	Bainbrigge Terrace, Headingley.
Buckton, Walter	49, Springfield Place.
Bulmer, Charles	Blenheim Lodge.
Burton, J. W.	Brown Berries, near Horsforth.
Butler, Edmund	Riseholme, Horsforth.
Buxton, Travers	Regent Villas, Headingley.
Calvert, John P.	Bank View, Chapel-Allerton.
Campbell, Archibald	23, Hyde Terrace.
Chatwin, E. W.	1, Willow Grove Road.
Cheetham, W.	Woodbottom Cottage, Horsforth.
Clare, W., M.D.	Park Square.
Clark, Miss	Potternewton Hall.
Clarke, Thos. Robt.	Newton House, Spencer Place, New Leeds.
Clay, J. W.	16, Warwick Place.
Coates, James Irwin, F.R.A.S.	Southend, Headingley.

Coleman, Henry W.	Armley.
Conder, Rev. E. R., M.A.	1, Newton Grove, New Leeds.
Conyers, Joseph	Castle Grove, Headingley.
Cooke, William	Moorfield House, Moor-Allerton.
Craig, Robert	49, Springfield Place.
Crampton, W. T.	Woodland View, Chapeltown.
Crawford, James	Chapel-Allerton.
Crawford, J. W.	Newton Lane.
Croysdale, John	4, Beech Grove Terrace.
Cuthbert, John	163, Woodhouse Lane.
Davenport, P. J.	St. John's Grove, Woodhouse Moor.
Davis, Edward	Milton Lodge, Far Headingley.
Dawson, William	Larchfield Mills, Hunslet Lane.
Dixon, Henry	6, De Grey Road.
Douglas, John	Seacroft Grange, Seacroft.
Dufton, Arthur Wellesley	74, Springfield Place.
Dunfield, James	2, Victoria Terrace, Far Headingley
Eagland, W. H.	Stanley Villas, Headingley.
Ellison, James Edward	10, De Grey Road.
Fairley, Thomas, F.R S.E.	8, Newton Grove.
Falcon, Thomas	Pudsey.
Farrar, Abraham	115, Hyde Park Road.
Fawcett, J. M.	Wortley Lodge, New Wortley.
Fenwick, Thomas	Allerton Hill, Chapel-Allerton.
Foster, George	Osmondthorpe.
Foster, George	Cardigan Road, Headingley.
Fraser, John	Grove House, Headingley.
Goodall, Charles	Francis Street, New Leeds.
Granger, Charles	Newton Grove, Chapeltown Road.
Greene, John	Whinmoor, near Seacroft.
Greenwood, Frederick	School of Medicine, Park Street.
Greenwood, W. F.	Park Villas, Hyde Park Road.
Hall, Frederick	North Street.
Hall, William	Headingley.
Hallilay, John	Burley Road.
Hamilton, R. W.	Cardigan Villas, Shaw Lane, Headingley.

Harding, T. W.	Hillary Lodge, Cavendish Road.
Harding, Anthony Robinson	Sefton House, Louis Street, New Leeds.
Hargrave, Charles	Oxley Hill, Moortown.
Hargrove, Rev. C.	Montpelier Terrace.
Harris, Miss Edith	7, Allerton Terrace, Chapel-Allerton.
Harrison, R. B.	6, Richmond Road, Headingley.
Hartnell, Wilson	11, Lyddon Terrace.
Harvey, Thomas	Ashwood, Headingley Hill.
Hassé, A. B.	31, Commercial Street.
Hatch, Samuel Charles	Laurel Bank, Shaw Lane, Headingley.
Hebblethwaite, A. R.	12, Blenheim Terrace.
Hebblethwaite, W. J.	Moor Allerton.
Hewetson, H. B.	9, Hanover Square.
Hezmalhalch, Joseph	Thorner.
Hill, John William, M.A.	Lynton Villa, Mount Preston.
Hindle, J. E.	North Grange, Horsforth.
Hirst, J. A.	Adel.
Hobson, Frederick	49, Briggate.
Holgate, Benjamin, F.G.S.	3, Atkinson Street, Hunslet.
Holmes, John	Holmsted, Roundhay.
Holmes, Joseph	Crown Chemical Works, Crown Street.
Hudson, Joseph	Rawden Lodge, Headingley.
Huggon, William, F.C.S.	50, Springfield Place.
Humble, Richard	Albion Street.
Hurd, Samuel	Leopold Mount, Chapeltown Road.
Inchbold, Henry	6, Blenheim Terrace.
Ingham, Henry	Heaton Lodge, Wortley.
Ingham, Samuel	Headingley Hall.
Jackson, Richard	Commercial Street.
Jefferson, J. S.	15, York Place.
Jefferson, S., F.C.S.	17, Virginia Road.
Jepson, E.G.	8, Woodsley Terrace.
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Kirkby, Thomas	. 3, Virginia Road.
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Hudson, Miss J. G.	Do. do.
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Ingham, Miss	Do. do.
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Jefferson, Miss	15, York Place.
Jefferson, Miss M.	Do.
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Jowitt, Miss F.	Harehills Grove, Leeds.
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Passavant, Miss Alice	Do. do.
Payne, E. S.	13, Briggate.
Pepperell, Miss	Manor House, Farnley.
Pope, Mrs. Edwd.	Farfield, Moor-Allerton.
Pope, Miss	Do. do.
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Reffitt, Mrs.	5, Victoria Terrace, Belle Vue Road.
Rider, Mrs. J.	High Royd, Belle Vue Road.
Rinder, W. H.	St. Ann's Mount, Burley, near Leeds.
Rinder, Miss	St. Ann's Mount, Burley, near Leeds.
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Ryder, Miss E. A.	Do. do.
Ryder, Miss Mary	Do. do.
Ryder, Miss Louisa	Do. do.
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Slater, Mrs. Seth	16, Greek Street.
Slater, Miss Alice E.	Do.
Slater, Miss Emily	Do.
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Teale, Lionel Henry	Do. do.
Teale, Michael	Do. do.
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Watson, Mrs. Charles	Wansted House, Burley.
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Williamson, Ann Elizabeth	Do. do.
Williamson, Harry	Do. do.
Williamson, James	Do. do.
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LEEDS

Philosophical & Literary Society

THE ANNUAL REPORT

For 1878-9.

THE

FIFTY-NINTH REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL & LITERARY

SOCIETY,

AT THE

CLOSE OF THE SESSION 1878-9.

Read at the Annual Meeting, May 6th, 1879.

LEEDS:
PRINTED AT THE OFFICE OF THE YORKSHIRE POST.

MDCCCLXXIX.

IMPORTANT RULE

RESPECTING THE PROPERTY OF THE SOCIETY,

PASSED OCTOBER 8TH, 1860.

That in the event of a dissolution of this Society, its Property and Effects, whether real or personal, shall not be disposed of for the personal benefit of the Members, but shall be appropriated in such manner for the advancement of Science, Literature, or Art, in the town of Leeds, as shall be determined by a majority of the Members at an extraordinary Meeting to be convened for that purpose. But that no dissolution of the Society shall take place without the consent in writing of a majority holding not less than two-thirds of the Proprietary Shares.

FORM OF A BEQUEST TO THE SOCIETY.

Every person desirous of bequeathing to the Society any sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form:—

I give and bequeath to the Trustees for the time being of the Society established at Leeds, called "THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY," *for the use of the said Society, the sum of* , *to be paid out of such part of my personal Estate as I may legally charge therewith.* [Or here enumerate the Effects or Property intended to be bequeathed.] *And I direct that the Receipt of the Treasurer of the said Society for the time being shall be an effectual discharge to my Executors for the said Legacy.*

REPORT OF THE COUNCIL

AT THE CLOSE OF THE

FIFTY-NINTH SESSION.

The numbers of Members and Subscribers remain about the same as last year, viz.:—

Original Proprietary Members (78 shares) ...	71
New Proprietary Members (120 shares) ...	97
Ordinary Members	13
New Ordinary Members	82
Annual Subscribers of £1 1s.	225
Annual Subscribers of 7s. 6d.	217
Total	705

The expenditure of the year includes charges for heating apparatus for the Museum, and also for the ventilation of the Lecture Hall, which have been much needed for some time past. Some of the ordinary disbursements, *e.g.*, for Lectures and Conversazione have exceeded the usual amount, but the debt of the Society to its bankers has been reduced during the year from £64 17s. 2d. to £33 18s. 3d.

The receipts again include the generous donation of £10 from Mr. Thos. Emsley, of Burley-in-Wharfedale.

The following papers have been read during the Session:—

1. "The Productive Career of Great Men." T. Clifford Allbutt, M.A., M.D., President of the Society. *Read Oct. 15th*, 1878.
2. "Marocco and the Moors (Fez-Mekinez-Rabat)." H. B. Brady F.R.S. *Read Oct. 22nd*, 1878.

3. "The Range of Animals as Affected by Past Events." L. C. Miall, F.G.S., Professor of Biology in the Yorkshire College. *Read Nov. 5th*, 1878.

4. "Emily Brontë, and the Authorship of 'Wuthering Heights.'" T. Wemyss Reid. *Read Dec. 3rd*, 1878.

5. "The Place of Imagination among the Mental Faculties." The Right Hon. Lord Houghton, M.A., D.C.L., F.R.S. *Read Dec. 17th*, 1878.

6. "The Solar Eclipse of 1878." T. E. Thorpe, Ph.D., F.R.S., Professor of Chemistry in the Yorkshire College. *Read Jan. 7th*, 1879.

7. "Right-handedness." J. Crichton Browne, M.D. *Read Jan. 21st*, 1879.

8. "The Birth and Death of Worlds." R. A. Proctor, B.A. *Read Feb. 4th*, 1879.

9. "The Court and the Political Society of Paris in 1830." James Macdonell. *Read Feb. 18th*, 1879.

10. "Recent Researches into the Origin and Development of the Least and Lowliest Life-Forms. Rev. W. H. Dallinger, F.R.M.S. *Read March 4th*, 1879.

11. "On Just Intonation in Music" (with Illustrations on the Enharmonic Harmonium). R. A. M. Bosanquet, M.A. *Read March 18th*, 1879.

12. "Domestication of Animals." G. Rolleston, M.A., M.D., F.R.S., Professor of Anatomy and Physiology, Oxford. *Read April 1st*, 1879.

13. "With the Russians in Asia—Campaign of 1877." Professor G. Forbes, M.A., F.R.S.E. *Read April 15th*, 1879.

A successful course of Six Object Lessons in Natural History, adapted to young persons, was given at the Museum, by Miss L. M. Passavant, in October and November. The syllabus included the following subjects:—Cats; The Structure of a Flower; The organisation of a Bird; Flightless Birds; Wheat; Corals; and Coral Polyps. Fifty tickets for the course were sold.

The attendance at the Conversazione, held on the 19th November, is believed to have been larger than at any similar meeting of this Society in previous years. The Lecture Hall was illuminated at intervals during the evening by the electric light, Siemen's patent being used, and an explanation of its principles given by Prof. Thorpe, F.R.S. Messrs. John Fowler and Co., of the Steam Plough Works, generously furnished a steam engine to provide motive power. Demonstrations were subsequently made with the phonograph, phonoscope, and microphone, and at a later hour photographs of the Paris Exhibition were exhibited by the oxy-hydrogen light. The walls of the Library were, as usual, covered with oil-paintings, lent by various gentlemen. The special feature of the Exhibition was a large collection of embroidered work, some of which had been sent from considerable distances, shown in the large Zoological Room. This collection was deemed of sufficient importance to justify a departure from the usual practice of the Society, by allowing it to be inspected by the public on the day following the Conversazione, on payment of a small admission fee. The thanks of the Council are due to the ladies who took an active part in the collection and arrangement of the embroidery. Various other artistic and scientific articles were contributed, and the Society may be congratulated upon the complete success of the meeting.

The most important acquisition of the past year consists of a large collection of marine animals received from the Zoological Station at Naples. Dr. Anton Dohrn, the director of that admirable institution, has forwarded to our Museum a number of special desiderata, including Torpedoes, Chimæra, Argonauts, Aplysia, Pyro-

soma, Cestum Veneris, and Medusæ of various kinds. The specimens are in excellent condition, and the supply is in most cases liberal. This valuable addition to our stores has entailed no expense upon the Society, the sum charged by the Zoological Station to cover the expenses of vessels, spirit, and packing, having been contributed by the President, Dr. Clifford Allbutt. An interesting set of local fossils has been purchased from the widow of an assiduous collector at Richmond, Yorkshire. The specimens consist largely of fossil fish teeth, from the carboniferous limestone, but include also Goniatites and Nautili, together with some singularly perfect mountain-limestone trilobites. A scorpion, disarticulated to show the segments and appendages, has been prepared for us by Mr. E. T. Newton. Other acquisitions by donation or purchase are recorded in the appended list. They are less numerous than usual. The unoccupied space at disposal is now so scanty as to permit of few additions, except in the case of special desiderata, and these rarely offer themselves to an extensive and long-established collection. The energy of the late Curator, Mr. Denny, filled the rooms of the Society almost to repletion with valuable and interesting objects, thus leaving to his successors as a principal duty, not so much the enlargement as the more complete arrangement and maintenance of the collections. Some development of our resources is however immediately contemplated. The space now placed at our disposal by the new gallery and wall-cases will render possible a considerable extension of the departments of Fishes, Amphibia, and Reptiles. The friends, and especially the foreign correspondents of the Society, are requested to observe that the rarer types in

these classes of animals will be for some years to come most welcome donations to the Museum.

The Curators have more than once recommended that suites of the smaller and less popular objects, especially of fossils and minerals, should be deposited in cabinets. The expense of procuring additional cabinet space is the only cause of delay in adopting this obvious expedient, which would relieve the pressure upon the wall and table cases, and at the same time permit a better selection of objects for public exhibition.

The insect collections have been cleaned, and the beetles have been re-arranged for the purpose of incorporating the additional collection made by Mr. Denny, and presented to the Museum by the President, Dr. Allbutt. Numerous additions have been made, chiefly by purchase from Mr. Enock, to the insects mounted on glass slips. A number of preparations, illustrating the anatomy of various vertebrate and invertebrate animals, have been prepared, mounted in vessels with glycerine jelly, and placed in the cases. The trials necessary to bring this process to a satisfactory degree of perfection have occupied much of the Curator's time during the last two years. It is unnecessary to offer any remarks on the results attained, as twenty-seven preparations of different animals are now open to inspection in the Museum. The method is described at length in a note appended to this Report. (Appendix I.) An upright case containing preparations and drawings to illustrate the general organisation of a bird, is in a forward state of preparation.

The Greek inscriptions brought from Athens by the late Mr. Benjamin Gott, have been deciphered, apparently

for the first time. We are indebted to Prof. Marshall, of the Yorkshire College, for the notice in Appendix II.

Visitors to the Museum will observe that the new wall-cases, measuring 102ft. by 6ft. 6in., are now erected along the north and east sides of the gallery, in the principal zoological room. The cost of their construction has been £165, in addition to £171 4s. 6d. expended on the construction of the gallery. The Council gratefully acknowledge the liberal donations of many members and subscribers of the Society, but as nearly £100 yet remains to be provided, they must appeal for aid from those who have not yet contributed to this important extension of the Society's Museum.

The hot-water apparatus introduced last year has protected the valuable Milner Collection of British Birds from damp, and has no doubt promoted the comfort of visitors, by slightly raising the winter temperature of the room.

The dissection of the Indian Elephant noticed in a previous Report has now been completed. A systematic account of the anatomy of the animal, founded upon observations made during the progress of the work, was contributed to the "Journal of Anatomy" in January, April, and October, 1878. It has been since reprinted as a separate publication.* The Council of the Society contributed £10 towards the expenses of illustration, and received sixty copies for distribution.

The number of persons who paid for admission to the Museum during the year was 31,651. In 1877-8 it was 38,548.

* The Anatomy of the Indian Elephant, by L. C. Miall and F. Greenwood, 84 pp. 8vo., 4 pl. (Macmillan & Co., 1878).

On the recommendation of the Council, a general meeting of the Society elected the Right Hon. W. E. Forster, M.P., an Honorary Member of the Society. Some years since Mr. Forster favoured the Society by reading a paper before it, and has shown a sustained interest in its welfare. Mr. Forster's services to the cause of primary education will ever be conspicuous in our national history. As President of the Leeds Educational Council, Mr. Forster has for some years past given a welcome stimulus to the cause of secondary education in this town.

APPENDIX I.

SOLID-MOUNTED MUSEUM PREPARATIONS.

By L. C. MIALL, Curator of the Museum of the Leeds Philosophical and Literary Society.

THE mounting of anatomical specimens in a firm jelly seems likely to prove a convenient substitute for immersion in alcohol or other fluid preservatives. The practical drawbacks to wet preparations are:—

1. Alteration or loss of the natural colour of the object.
2. Turbidity, discoloration, or sediment in the fluid.
3. Loss of fluid by evaporation.
4. Optical distortion and difficulty of close inspection.

These last objections are only indirectly due to the fluidity of the preservative medium, which renders cylindrical vessels, though not absolutely, yet practically, indispensable.

Mounting in a solid jelly has been found to remove these difficulties. The process was suggested by the glycerine-jelly mounting so familiar to the microscopist.

Practical Instructions.—The object should be washed clear of blood and stains, and if the colour is not liable to be rapidly discharged, the preparation may with advantage be soaked for some hours in the following solution:—

(1)	Glycerine - - -	1 part.
	Water - - -	2 parts.
	Thymol - - -	·5%.

Spongy substances, containing air, should be cut open and soaked thoroughly. Internal cavities of appreciable size should be injected with the jelly. In all cases air-bubbles are troublesome and risky, so that care should be taken to avoid their introduction. Previous immersion in alcohol, chloride of zinc solution, picric acid solution, and other common fluid antiseptics, does not interfere with mounting in jelly, but the preparation must be washed clean, and, if possible, soaked in the solution No. 1.

The vessel for mounting may be of earthenware, glass, gutta-percha, ebonite, zinc, or other material proof against moisture. The upper edges should be ground to a plane surface, and fitted with a stout and perfectly flat cover-glass. A ground of opal or cobalt glass, blue

wax, or paraffin, may be used to set off the preparation, but case must be taken to dislodge even minute air-bubbles beneath the ground. A bright blue ground may be obtained by setting cobalt glass in plaster of Paris, or pasting white paper behind it.

A convenient formula for the jelly, which has been thoroughly proved by trial, is as follows:—

(2)	Gelatine	2½ oz.
	Glycerine	8 oz.
	Saturated Aqueous Solution of Arsenious Acid	24 oz.
	Alcohol	4 oz.
	Acetic Acid	2 dr.

Clarify with white of egg.

The melting point is 98°F.

Another jelly may be made thus:—

(3)	Gelatine	3 oz.
	Chloride of Zinc	2 oz.
	Water	36 oz.
	Acetic Acid	2 dr.

Clarify as before.

The melting point is 96°F.

The chloride of zinc jelly has given satisfaction so far, but it has not been so fully tested as No. 2.

No pins or other fastenings are required. It is generally best to fix the preparation to the floor of the vessel by a small quantity of jelly. When this has set, pour in more, so as to cover the object as completely as possible, provided that it does not float up. Bubbles should be avoided by pouring very steadily. Such as appear may be broken with a hot wire. The jelly must now be allowed to set quite firm. Then fill the vessel to the brim, and apply the cover-glass. If difficulty be met with in filling the vessel absolutely full, the jelly may be allowed to set while uncovered; a small excess of fluid jelly should afterwards be added towards the middle of the surface, and a warmed cover-glass gently pressed down upon it.

Large preparations, which require upwards of a pint of jelly, present special difficulties. It has been found best in these cases to let the cover-glass rest below the margin of the vessel on ledges accurately parallel with the top. The cover-glass is cut smaller than the vessel, and the exposed border of jelly is protected by painting it with spirit varnish, and afterwards covering it with a moulding of wood or paper.

The jelly should be gently and completely melted for use, care being taken to avoid a high temperature. A ten-ounce bottle is a convenient size for storing, and immersion in water of about 150°F. is the handiest way of melting. The jelly should be allowed plenty of time to set before being disturbed, and it is well to fill the vessels in a cool place. When the final pouring-in of fluid jelly has been effected, the preparation will sometimes float up against the cover-glass, to the mortification of the operator. By allowing ample time for the setting of the deep layer, and cooling the fluid jelly to very near its melting-point before it is added, such accidents may be avoided.

Superfluous jelly may be removed by washing with cold or tepid water, and the glass-cover cleaned with powdered chalk. Air-bubbles may be run to the edge of the vessel by cautiously warming the cover-glass immediately above them with a strip of hot metal, and at the same time tilting the vessel. Their removal should not be attempted until the jelly has set firm. The edges of the cover-glass should be painted repeatedly with spirit varnish, and then secured with strips of bookbinder's cloth and coaguline. A mixture of Canada balsam and beeswax, to which drop black may be added, is useful for closing the larger chinks or holes. The finished preparation may be displayed in any position. Edmett's frames of coppered wire form a convenient support in many cases.

The process may be varied endlessly, and every mounter will find out ways adapted to his special requirements.

Solid-mounted zoological preparations were principally in view at the Leeds Museum, but the method is equally appropriate to the wants of the pathologist. It has been found possible to preserve some of the more evanescent characters of various morbid specimens in this way, and encouraging results may be expected when the trial is made on a more extensive scale. A few botanical dissections have already been put up. It is found that flowers and fruits lose their colour when soaked in a medium containing glycerine, but further experiments are contemplated to see whether this difficulty cannot be overcome. Using gelatine as the basis of the medium, and various antiseptics in turn until the best is discovered, it may be possible to preserve unaltered not only the form but the colour of vegetable preparations. No confident opinion can be expressed on this point, however, until success is more nearly within reach than at present.

This method of putting up anatomical preparations was communicated by the writer to *Nature* (July 18th, 1878), but important improvements have since been made.

APPENDIX II.

OBSERVATIONS ON CERTAIN GREEK INSCRIPTIONS

IN THE MUSEUM OF THE

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

By JOHN MARSHALL, M.A., Professor of Classical Literature and History, Yorkshire College.

IT has been suggested by the Officers of the Society that some notes on the Greek inscriptions belonging to the Society might be of interest; and I have accordingly done my best towards their explanation.

I. Unfortunately the majority of these remains are in so imperfect a condition that little more than a very general notion of their purport is attainable. This is more especially true of the longest and most important of them. It consists of an upright block of marble, in its present condition about thirty inches in height and half that amount in breadth. In its original state, however, it must have been at least four inches broader, perhaps six or seven: consequently, a hiatus of several words at either end occurs in each line of the inscription. The earlier and later parts also are extremely defective throughout. The general result is, that although some imperfect notion may be formed as to the nature and purport of the inscription, no definite or detailed reconstruction is attainable. I shall therefore merely transcribe the actual inscription, supplying such portions of words in smaller type as can be restored with certainty, without undertaking the highly conjectural task of reconstructing the whole document, and I shall then append a few notes as to its general drift, so far as this is possible.

PAN ΩNA
ΔΙΚΑΣΜΕΝΟΙΕΙΣΙΝΟΙ
ΤΟΙΣΙΔΙΩΤΑΙΣΕΚΤΩΝ
ΗΑΔΙΚΗΜΑΤΩΝΤΑΙΣΠΟΛΕΣΙ
ΕΤΙΔΙΚΗΝΚΑΤΑΤΗΣΠΟΛΕΩΣΤΗΣ
ΤΗΣΠΑΡΙΩΝΜΗΔΥΠΟΤΗΣ
ΜΗΔΕΟΦΕΙΛΗΜΑΜΗΔΕ

[illegible]

The general character of the document is obvious enough. It is the record of a solemn compromise of certain disputes which had arisen between the ruling cities of Eretria in Euboea and Paros, an important island of the Cyclades. Both of these places were actively engaged in commerce and were for a considerable period members of the Athenian maritime league. Eretria was in earlier days famous as the scene of the first success of Darius' great expedition into Greece, which terminated so disastrously for him and so gloriously for Athens, on the plain of Marathon. Eretria, which had taken part with Athens in her expedition to aid the rising of the Greek cities in Asia, was made with her a special object of Persian attack, and the city was in fact burned by the Persians but was rebuilt on a new site shortly after the Persian defeat. Paros, itself the great source of the marble used throughout Greece for sculpture purposes, took the Persian side for a time

in that struggle; and it was by his unsuccessful attempt to reduce the island, that Miltiades, the hero of Marathon, concluded his career so unfortunately. During the Peloponnesian war we hear of Eretria and Paros in the year of the revolution of the Four Hundred as both acting in an anti-Athenian direction.

The intimacy of intercourse between the maritime cities of Greece, combined with their absolute political independence, resulted in numberless international difficulties with regard to the pecuniary claims of states or individuals upon their independent neighbours. The result of this state of things was that international arrangements, usually called *Σύμβολα*, were entered into, for the purpose of allowing one party to sue for remedies in the courts of the other. Such suits were called *Δίκαι ἀπὸ συμβόλων*, and the name became famous during the Athenian supremacy: for one of the chief grievances of the allies was that all such suits were required to be transferred from the local courts to those of Athens.

In the document before us it appears to be agreed that a number of cross suits, public and private, then pending should be quashed by mutual consent: the terms on which this was to be done are either not stated, or are unfortunately not now to be recovered. Nor are we able to supplement our ignorance in this particular case from other sources, as we are in fact entirely ignorant of the terms of such agreements, no inscriptions recording any of them in detail being, so far as I know, in existence. One may imagine that this compromise may have been a device to evade the necessity of bringing such suits before the imperial courts; the local courts by mutual arrangement taking cognisance of those arising within their own jurisdiction. Nothing of this, however, appears on the face of the inscription.

It is not impossible that the inscription may be as old as the time of Pericles; for although the long letters H and Ω do not occur in *Athenian* inscriptions before the close of the Peloponnesian war, they were in common use in the *islands* at a much earlier period. The occurrence of the short E for H in one case, line 8, ΙΔΙΩΤΕΙ, would in fact go to confirm the supposition that the inscription is a comparatively early one.

The inscription begins with referring to the suits that had been brought by the two parties, and proceeds to record the agreement that

no further action should be brought on any of the questions whether of wrong or debt then pending. This agreement was apparently to be sanctioned by certain sacrifices to Jupiter, the god of treaties and covenants: the penalty for its infraction in the case of either city was to be twenty talents, about £5000: and in the case of an individual, five talents. Certain persons are named, one of them priest of Dionysus, who are to ratify this agreement for the several parties, and it is provided that the agreement should be engraved.

The practice of engraving public acts on stone or brass was universal in Greece: thus, in the treaty entered into in 420 B.C. between Athens and Argos and her allies, preserved in Thucydides (Book v. cap. 47), after providing for the ratification thereof by the magistrates of the respective cities, it is provided that one copy should be engraved on a stone pillar by the Athenians and erected in the city; another by the Argives, to be placed in the temple of Apollo in their market-place; and one by the Mantineans, to be placed in the temple of Zeus. A fourth was to be placed at Olympia in the ensuing Olympic festival (*cf.* also Thuc., same book, caps. 18 and 77.)

II. The next inscription presents no difficulty. It occurs on a block of stone which had originally formed the pedestal of a small statue or other memorial. It is inscribed as follows:—

ΑΜΥΝΤΑΝ ΛΥΣΙΜΑΧΟΥ ΚΝΙΔΙΟΝ
ΑΦΡΟΔΙΣΙΟΣ ΑΜΥΝΤΟΥ ΣΟΛΕΥΣ
ΕΥΕΡΓΕΣΙΑΣ ΕΝΕΚΕΝ ΤΗΣΕΙΣΕΑΥΤΟΝ
ΑΠΟΛΛΩΝΙ ΑΡΤΕΜΙΔΙ ΛΗΤΟΙ

(*Note.*—The few defective letters are supplied in smaller type.)

'Aphrodisius son of Amyntas, of Soli, erects a statue to Amyntas, son of Lysimachus, of Cnidus, on account of his kindness to himself. Dedicated to Apollo, Artemis, Leto.'

Cnidus was a member of the Dorian Hexapolis, a league of certain Greek colonies in Asia Minor of which Rhodes was the centre. Soli in Cilicia was a colony from Rhodes, and the occurrence of the name Amyntas in both makes it probable that the dedicator of the statue and his friend were relatives.

Cnidus was famous for its collections of Greek sculptures, and it is interesting to note, that according to Pausanias (x. ii. 1) the Cnidians

dedicated at the temple of Delphi, among other objects, a group of Leto, Apollo, and Artemis, shooting at the monster Tityus. We may therefore conjecture that the Cnidians, like their neighbours the Carians, specially worshipped these three divinities.

Lower down on the same block there occurs the further inscription—

ΗΦΑΙΣΤΙΩΝ ΜΥΡΩΝΟΣ ΑΘΗΝΑΙΟΣ ΕΠΟΙΕΙ

'Hephaestion son of Myron, of Athens, was the maker.'

It is possible that this sculptor may have been a son of the famous Athenian sculptor Myron, who flourished in the age of Pericles, creator of the Discobolus, and of the 'Dog of Alcibiades,' recently rescued from the fire at Duncombe Park. Myron certainly was an Athenian citizen, in virtue of the admission of his native town, Eleutherae, to civic union with Athens.

III. Another inscription, tolerably perfect, is as follows:—

ΟΙΑΓΟΡΑΝΟΜΟΙ
ΚΑΛΛΑΙΣΧΡΟΣ
ΜΟΙΡΑΓΕΝΟΥ
ΔΙΟΝΥΣΙΟΣ
ΔΗΜΕΟΥ
ΣΩΧΑΡΜΟΣ
ΣΩΧΑΡΜΟΥ
ΑΦΡΟΔΙΤΗΙ

'The stewards of the market-place, Callaeschrus son of Moeragenes, Dionysius son of Demeas, Socharmus son of Socharmus (dedicate this) to Aphrodite.'

The Agora of a Greek town was the centre of its civic life. There the principal traffic of the town was conducted: the theatre, the gymnasia, the chief temples, bordered it: it was the general resort of the inhabitants, and usually also the meeting-place of their public assemblies, whether for the trial of offenders, the passing of laws, or the election of their public officers. The Agoranomi had a general superintendence of the business of the Agora; they supervised the prices and the quality of the goods offered for sale, they exacted all tolls and market-dues, they saw to the erection and repair of public buildings in or near the Agora—fulfilled in short most of the duties of commissioners of markets, police, and public works. Their duties are graphically

sketched in a passage from Plato's Republic (Book iv. 425), which is thus translated by Prof. Jowett:—"Well, and about the business of the Agora, and the ordinary dealings between man and man, or again about agreements with artisans; about insult and injury, or the order in which causes are to be tried, and the appointment of juries, what would you say? There may be also questions about any impositions and exactions of market and harbour dues which may be required, and in general about the regulations of markets (ἀγορανομικά), police, harbours, and the like." "But," he adds, "oh! heavens! shall we condescend to legislate on any of these particulars?" In Plato's ideal republic such petty matters would regulate themselves.

The inscription here copied doubtless was inscribed on some statue or other decoration of the Agora, erected in honour of the goddess of love by the Agoranomi of the year.

IV. Another brief inscription occurs on a slab of marble, having on it the representation of a cinerary urn, in low relief. It is as follows:—

ΔΗΜΟΧΑΡΗΣ ΗΓ - - - ΗΛΟΧΟΥ

This is simply the name of the person over whose grave the inscription had been placed, with the (now mutilated) name of his father. Such was the usual simple fashion in which the buried dead were commemorated by the Greeks.

V. One further fragment remains to be noticed. It is inscribed on a broken slab of marble in large and unusually open letters. At the left upper corner occurs the word ΓΟΛΟΣΣΑΝ, possibly the name of a place; but the word is entirely unknown to me. Then to the right of the slab—

Τ Ο Υ Σ Ε
Φ Ο Ι Ν Ι Ξ Ν
Τ Ο Υ Σ Ε Α Υ Τ Ο
Κ Α Ι Ο Μ Ο Ν Ο

Nothing more can be got from this fragment except that it refers perhaps to a representation of the Phœnix, the famous fabulous bird of antiquity, collecting or burying the burning remains of his own former body. One of the many forms of the story of the Phœnix was, that

after a life of 500 years, he placed himself on a funeral pyre of spices, to which he himself set fire: and that out of the ashes he rose again in renewed form, and so had the privilege of performing the last funeral rites to his former self.

I assume that KAIOMONO must represent KAIOMENO, participle of the verb καίω: but if so, the O must be a mistake of the sculptor's. It is possible, of course, that the letters represent portions of a phrase entirely different: but there are not sufficient materials for guessing what it is.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year, 1878.

1878.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January...	41·1 Fah.	29·932	2·500
February	43·2 ,,	30·059	1·080
March	43·2 ,,	29·870	·520
April	46·7 ,,	29·683	2·130
May	52·7 ,,	29·587	4·110
June	58·9 ,,	29·759	4·125
July	64·1 ,,	29·876	·860
August...	61·7 ,,	29·590	5·505
September	56·9 ,,	29·770	2·920
October...	51·7 ,,	29·542	2·450
November	39·7 ,,	29·623	5·108
December	36·4 ,,	29·545	1·410

The mean monthly temperature was 49·6.

The mean monthly height of the barometer was 29·736 inches.

The total rainfall for the year was 32·718 inches.

The greatest degree of heat, as indicated by the thermometer in the sun, was 112° on July 20th; the greatest in the shade was 92° on July 20th; and minimum 14° on December 25th.

The greatest barometric pressure was on March 16th, being 30·572 inches, the temperature of the mercury being 53°; the least pressure was on October 10th, being 28·884 inches, the temperature of the mercury being 62°.

The greatest fall of rain (during 24 hours) was on April 20th, being 1·340 inches.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the mean level of the sea, 137 feet; height of the rain-gauge above the street, 46 feet.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

STATEMENT OF RECEIPTS AND EXPENSES FOR THE YEAR 1878-79.

RECEIPTS.	£	s.	d.	£	s.	d.
To Balance in hand, May 1, 1878...				2	19	4
,, Annual Subscriptions, viz.—						
,, 80 New Proprietary Members, at 21/-...	84	0	0			
,, 69 New Ordinary ditto 21/-...	72	9	0			
,, 12 Old Ordinary ditto 42/- ..	25	4	0			
,, 185 Old Annual Subscribers, at 21/-...	194	5	0			
,, 22 New ditto 21/-...	23	2	0			
,, 176 Old Annual Subscribers, at 7/6...	66	0	0			
,, 24 New ditto 7/6...	9	0	0			
,, Arrears	41	18	6			
				515	18	6
,, Rent, viz.—						
,, Cellars	63	0	0			
,, Lecture Room	197	0	6			
				260	0	6
,, Receipts for the Museum	131	17	7			
,, ,, Conversazione	38	18	0			
				170	15	7
,, Sale of Catalogues	1	1	3			
,, Sundries	0	5	0			
				1	6	3
,, Donation from T. Emsley, Esq. ...	10	0	0			
,, Sale of Forfeited Shares	21	0	0			
				31	0	0
,, Balance due to Bank				33	18	3
				£1015	18	5

DISBURSEMENTS.	£	s.	d.	£	s.	d.
By Balance due to Bank, May 1st, 1878				64	17	2
,, Repairs	8	1	4			
,, Taxes and Rates	4	8	1			
,, Fire Insurance	15	0	0			
,, Coals, &c.	18	18	8			
,, Gas	17	1	10			
,, Cleaning the Hall	10	9	7			
				73	19	6
,, Salaries, viz.—						
,, Curator's	150	0	0			
,, Secretary's	100	0	0			
,, Assistant Curator's	55	15	0			
,, Porter's...	66	8	0			
,, Fee to Auditor	3	3	0			
				375	6	0
,, Collections, viz.—						
,, Geological	6	6	4			
,, Zoological	56	5	7			
,, Library...	27	4	5			
				89	16	4
,, Postages	21	9	3			
,, Printing and Advertising	57	9	3			
,, Lectures	121	9	6			
,, Conversazione	102	10	8			
,, Commission to Collector	10	16	9			
,, Bankers' Commission...	2	8	0			
,, Sundries	23	6	4			
				339	9	9
,, Heating Apparatus	51	0	0			
,, Ventilation of Hall	16	18	8			
,, Furniture	4	4	0			
				72	2	8
,, Balance in hand—Petty Cash				0	7	0
				£1015	18	5

Audited and found correct,

CHAS. BEEVERS.

ACCOUNT OF THE SPECIAL FUND

FOR

Providing a New Gallery and Wall Cases in Large Zoological Room.

RECEIPTS.

	£	s.	d.	£	s.	d.
To Subscriptions acknowledged in previous Reports				237	17	6
,, Bank Interest				1	16	0
,, New Subscriptions, viz.—						
J. Hepper	1	1	0			
James Bedford	1	1	0			
F. W. Tetley	5	0	0			
Prof. Thorpe	5	5	0			
Rev. E. H. Marshall	1	1	0			
				13	8	0
,, Balance still to be raised				83	3	0
				£336	4	6

PAYMENTS.

	£	s.	d.
By Cost of Erecting Gallery, as per last year's report	171	4	6
,, Cost of Wall Cases	165	0	0
	£336	4	6

Examined and found correct,

CHAS. BEEVERS.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY,

1878-9.

GEOLOGY AND MINERALOGY.

Nodule of Hæmatite	Rev. W. Bramley.
Fossil Fish-teeth, Mollusca, Trilobites, &c., from Mountain Limestone of Richmond	Purchased by the Society.
Stigmaria from Manston Colliery	Mr. Pegler.

ZOOLOGY AND BOTANY.

Neapolitan Specimens:—10 Torpedos, 2 Chimæra monstrosa, 3 Centrophorus granulosus, 2 Zeus faber, 3 Ommastrephes sagitattus, 5 Argonauta argo, 4 Carinaria mediterraneus, 10 Aplysia, 9 Umbrella mediterranea, 20 Pyrosoma atlanticum, Salpa democratica, 10 Terebratula vitrea, Sagitta, 20 Sipunculus, Spirographis Spallanzani, 10 Cestum Veneris, 10 Rhizostoma Cuvieri, Beroe ovatus	The Zoological Station of Naples. The incidental expenses defrayed by Dr. Clifford Allbutt, President of the Society.
Collection of Bird Skins, viz.:—Chesnut-billed Euphone, Black-beaded Chatterer, Collared Finch, Red-crowned Manakin (2), Yellow-backed Brazilian Warbler, Spurious-winged Cuckoo, Cayenne Tyrant, Cacuado, Red-bellied Woodpecker, Lesser Yellow-headed Woodpecker, Yellow-headed Woodpecker, Brazilian Shrike, Rufous puff-backed Shrike, Black-billed Tanager, Red-headed Tanager, Grey-headed Ant Thrush, Tasmanian Thrush, Rock Thrush, &c.	John Eddison, Osborne Terrace, Virginia Road.
Three Cobs of Maize and Pop-corn	Councillor Thomas Walker, 11, Blenheim Terrace.

ARCHÆOLOGY AND ETHNOLOGY.

Bushman Skull Kaffir Skull	Rev. W. Bramley.
Further Collection of Flint Implements from Adel	Charles G. Twigg, Reformatory, Adel.

TECHNOLOGY.

Newfoundland Lucifer Matches	Prof. A. H. Green, M.A.

PUBLICATIONS.

Catalogue of Cheiroptera in the British Museum	Trustees of the British Museum.
Guides to the First and Second Vase Rooms in the Department of Greek and Roman Antiquities	
Guide to the Exhibition Rooms of the Departments of Natural History and Antiquities	
Guide to the Autograph Letters, Manuscripts, Original Charters, and Royal Baronial and Ecclesiastical Seals — Department of Manuscripts.....	
Index Collection of Minerals	
Catalogue Greek Coins—Seleucid Kings of Syria	
Lepidoptera Heterocera, Pt. II.....	
Catalogue of Birds, Vol. IV.....	
Greenwich Observations, 1876	Lords Commissioners of the Admiralty.
Reductions of Twenty Years' Photographic Records of the Barometer, Dry and Wet Bulb Thermometers, and Twenty-Seven Years' Observations of the Earth Thermometers, made at Greenwich Observatory	
Results of Astronomical Observations, made at the Royal Observatory, Cape of Good Hope, 1859	
Ditto 1875	
Meteorology of the Bombay Presidency	
Views, taken from Colaba Observatory, to accompany ditto	
Bulletins of the United States Geological and Geographical Survey of the Territories, Vol. IV., Nos. 2, 3.....	Dr. Hayden, United States Geologist, Washington.
Bibliography of North American Invertebrate Palæontology	
Astronomical Observations, taken to the end of 1877, at the Private Observatory of Joseph Gurney Barclay, F.R.A.S., Leyton, Essex, Vol. IV.	The Author.
Flora and Fauna of the Devonian and Carboniferous Periods, by Dr. Bigsby	Purchased.

Colchester Castle a Roman Building	The Author, Geo. Buckler
A Practical Treatise on Friendly Societies	The Author, Arthur Scratchley, M.A.
West Yorkshire: an Account of its Geology, Physical Geography, Climatology, and Botany	Purchased.
Waring's Stone Monuments, Tumuli, and Ornaments of Remote Ages..... ...	Presented by W. Beckett Denison, M.P.
Catalogue of the Library of the American Philosophical Society, Pt. III.....	The Society.
Æneidea, or Critical, Exegetical, and Æsthetical Remarks on the Æneis, Vol. I., 3 pts., Vol. II., 1 pt.	The Royal Irish Academy.
Geology of the West Riding of Yorkshire Ditto do. do. Leicestershire A Scheme for the Examination of the Glacial Deposits of the Midland Counties of England (tracts).....	The Author, W. J. Harrison, Town Museum, Leicester.
Remarks on the Sedimentary Formations, of New South Wales, 4th ed. ..... Railways of New South Wales: a Report on their Construction and Working during 1876	Royal Society of New South Wales.
Coal, its History and Uses, by Professors Green, Miall, Thorpe, Rücker, and Marshall, of the Yorkshire College.....	Messrs. Macmillan & Co.
Mémoires de la Société d'Emulation d'Abbeville, 1873-6	The Society.
A Descriptive Catalogue of the Etched Works of Rembrandt Van Rhyn ..... A Reply to a Letter and Pamphlet published by F. S. Haden, under the title of "The Etched Work of Rembrandt."	The Author, Rev. Charles Henry Middleton, B.A.
Studies in Comparative Anatomy:— II. The Anatomy of the Indian Elephant, by L. C. Miall and F. Greenwood	From the Authors.
Map of the Old and New Turnpike Roads leading to Leeds Old Bridge ..... The intended New Bridge, Main Road, and Branches connecting the present Roads, 1835	Dr. Hare.

PERIODICALS.

WEEKLY.

Nature	Purchased.
Leader (Australian Newspaper)	Publishers.
Australasian	Publishers.

BI-MONTHLY.

Journal of the Royal Microscopical Society	The Society.

MONTHLY.

Annals and Magazine of Natural History Geological Magazine	Purchased.
Illustrated Australian News	Publishers of the "Leader."
Monthly Notices of the Proceedings of the Royal Society of Tasmania (yearly)	Royal Society of Tasmania.
Journal of the Chemical Society	Chemical Society.
Monthly Notices of the Royal Astronomical Society	Royal Astronomical Society.
Atti della R. Accademia dei Lincei	The Society.
Monthly Journal of Science	Purchased.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society	Geological Society.
Quarterly Returns of Marriages, Births, and Deaths	Registrar General.
Journal of the Royal Historical and Archæological Association of Ireland	Royal Historical and Archæological Association of Ireland.
Journal of the Anthropological Institute	Anthropological Institute.
Proceedings of the Geologists' Association	Geologists' Association.
Zeitschrift für Wissenschaftliche Zoologie	Purchased.
Canadian Journal of Science, Literature, and History	Canadian Institute, Toronto.

ANNUALLY.

Philosophical Transactions	Purchased.
Mineral Statistics of the United Kingdom	Director General of the Geological Survey.
Annual Report of the Yorkshire Philosophical Society	Yorkshire Philosophical Society.

Proceedings of the Glasgow Philosophical Society	Glasgow Philosophical Society.
Mittheilungen der Kais. und Königl. Geographischen Gesellschaft in Wien	Royal Imperial Geographical Society of Vienna.
Proceedings of the Academy of Natural Sciences of Philadelphia (3 pts. a year)	Academy of Natural Sciences of Philadelphia.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Proceedings of the Royal Society of Edinburgh .... Transactions of do.	Royal Society of Edinburgh.
Bulletin of the Essex Institute	Essex Institute, U.S.A.
Publications of the Ray Society.....	Purchased.
Abstract of the Proceedings of the Liverpool Geological Society	Liverpool Geological Society.
Transactions of the Edinburgh Geological Society	Edinburgh Geological Society.
Kongliga Svenska Vetenskaps Akademiens Handlingar Do. do. Lefnadsteckninghar Ofversigt af Kongliga Vetenskaps Akademiens Förhandlingar .... Bihang till Kongliga Vetenskaps Akademiens Handlingar.....	Royal Swedish Academy of Sciences.
Natural History Transactions of Northumberland and Durham	Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne, and Tyneside Naturalists' Field Club.
Monographs of the Palæontographical Society	Purchased.
Proceedings of the Minnesota Historical Society .... Annual Report of the Minnesota Historical Society	Minnesota Historical Society, St. Paul, Minnesota, U.S.
Proceedings of the Berwickshire Naturalists' Club	Berwickshire Naturalists' Club.
Proceedings of the Liverpool Literary and Philosophical Society	Liverpool Literary and Philosophical Society.
Proceedings of the Boston Society of Natural History..... Memoirs of do	Boston Society of Natural History.
Transactions of the Historic Society of Lancashire and Cheshire	Historic Society of Lancashire and Cheshire.

Memoirs of the Royal Astronomical Society	Royal Astronomical Society.
Transactions and Proceedings of the New Zealand Institute	New Zealand Institute.
Proceedings of the Warwickshire Naturalists' and Archæologists' Field Club	Warwickshire Naturalists' and Archæologists' Field Club.
Annual Report and Papers of the Associated Architectural Societies	Associated Architectural Societies.
Journal and Annual Report of the Royal Institution of Cornwall	Royal Institution of Cornwall.
British Association Report	British Association.
Annual Report of the Royal Cornwall Polytechnic Society	Royal Cornwall Polytechnic Society.
Annual Report of the Warwickshire Natural History and Archæological Society	Warwickshire Natural History and Archæological Society.
Annual Report of Harvard College	The College.
Annual Report of Harvard University...	The University.
Annual Report of the U.S. Patent Office	United States Patent Office.
Annual Report of the Hull Literary and Philosophical Society	Hull Literary and Philosophical Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club.....	Belfast Naturalists' Field Club.
Annual Report of the Geologists' Association	Geologists' Association.
Annual Report of the Museum of Comparative Zoology at Harvard College, U.S.A.....	Museum of Harvard College, Cambridge, Mass.
Annual Report of the Birkenhead Literary and Scientific Society	Birkenhead Literary and Scientific Society.
Journal and Proceedings of the Royal Society of New South Wales	Royal Society, New South Wales.
Annual Report, Department of Mines, New South Wales.....	The Department, New South Wales.
Annual Report of the Sheffield Literary and Philosophical Society	Sheffield Literary and Philosophical Society.
Proceedings of the Royal Society	Royal Society.
Smithsonian Miscellaneous Collections ... " Contributions to Knowledge	Smithsonian Institution.

Memoirs of the Manchester Literary and Philosophical Society ..... Proceedings do. (about fortnightly, Oct. to April).....	Manchester Literary and Philosophical Society.
Journal of the Royal Dublin Society (about once a year)	Royal Dublin Society.
Geological Record.....	Purchased.
Proceedings of the Royal Institution (2 pts. a year)	Royal Institution of Great Britain and Ireland.
Proceedings of the Zoological Society (4 pts. a year—June, Aug., Oct., April)	Zoological Society.
Edinburgh Astronomical Observations...	Royal Observatory, Edinburgh.
Proceedings of the American Academy of Arts and Sciences	American Academy of Arts and Sciences.
Report of the Smithsonian Institution ...	Smithsonian Institution.
Transactions of the American Philosophical Society..... Proceedings do. (several pts. a year)	American Philosophical Society.
Abridgments of Specifications of Patents, with Indices	Commissioner of Patents.
Transactions of the Academy of Sciences of St. Louis	The Academy of Sciences of St. Louis, U.S.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger	Royal Danish Society of Sciences.
Proceedings of the Royal Irish Academy	Royal Irish Academy.
Journal of the Royal Geological Society of Ireland	Royal Geological Society of Ireland.
Transactions of the Manchester Geological Society	Manchester Geological Society.
Transactions of the Leicester Literary and Philosophical Society	Leicester Literary and Philosophical Society.
Annual Report of the Leeds Naturalists' Club and Scientific Association	Leeds Naturalists' Club and Scientific Association.
Proceedings of the Yorkshire Geological and Polytechnic Society	Yorkshire Geological and Polytechnic Society.
Proceedings of the Davenport Academy of Natural Sciences	Davenport Academy of Natural Sciences, Iowa, U.S.
Report of the Middlesex Hospital	The Hospital.
Calendar and Annual Report of the Yorkshire College	The College.

25	Eddison, John Edwin, M.D.	29, Park Square.
26	Ellershaw, John .	Oakfield, Kirkstall.
27	Ellershaw, Walter .	Hull.
28	Empson, Christopher .	Beechwood, Sowerby Bridge.
29	Ford, Mrs. .	Adel Grange.
46	George, Thomas Willington .	Gledhow Grove.
33	Goodman, Benjamin .	Gledhow House.
34, 35	Gott, Rev. John, D.D. (2 shares) .	Woodsley House.
36–8	Gott William Ewart (3 shares) .	Armley House.
61	Greenhow, Thomas Michael, M.D. .	Newton Hall.
39	Harding, T. R. .	St. Ann's Tower, Headingley.
40	Heaps, John William .	Park View Villas, Cowper Street, Leeds.
41	Heaps, Charles Denison .	Woodhouse Lodge, Woodhouse Lane.
42	Heaton, John Deakin, M.D., F.R.C.P. .	Claremont, Leeds.
44	Hirst, Joseph .	Wharfedale Lawn, Wetherby.
45	Holt, Joseph .	Ogbeare Hall, Holsworthy, Devon.
30	Horsfall, John, M.A., F.R.C.S. .	Hillary House.
24	Howgate, William .	Park Row.
47	Ingham, Constantine .	Clarendon Place.
48	Ingham, William .	Belmont, Chorley Lane.
49	Jowitt, John .	Harehills, Potternewton, near Leeds.
51	Kinnear, Thomas John, M.A. .	Horsforth Hall.
52	Latimer, John .	St. Mark's Villa, Woodhouse Lane.
55	Luccock, John Darnton .	54, North Street.
57	Lupton, Francis .	Beechwood, Roundhay.
53	Lupton, Francis Martineau, M.A. .	Wellington Street.

LIST OF MEMBERS AND SUBSCRIBERS,

1878-9.

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* *Members deceased, whose shares have not been transferred.*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	Aldam, Wm.	Frickley Hall, Doncaster.
3	Armitage, Wm. James	
4	Arthington, Robert	73, Hunslet Road.
1	Atkinson, John William	13, Woodhouse Square.
5	Baines, Edward	St. Ann's Hill, Burley, near Leeds.
6	Barran, John, M.P.	Chapel-Allerton Hall.
20	Battye, James C.	Ribstone, near Wetherby.
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	York Place.
9	Broadhead, Henry	Chapel-Allerton.
11	*Brown, James.	
31, 62	Brown, Samuel James (2 shares)	Loftus Hill, near Knaresborough.
13, 14	Calverley, Edmund (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	*Chorley, Henry	
17	Clapham, Samuel	4, Marlborough Terrace, Belle Vue Road.
19	*Coghlan, William	
21	Cudworth, John W.	52, Mount Preston.
22	Denison, William Beckett, M.P.	Nun-Appleton, York.
23	Dibb, Mrs. Elizabeth	Vernon House, Brondesbury, London.

25	Eddison, John Edwin, M.D.	29, Park Square.
26	Ellershaw, John	Oakfield, Kirkstall.
27	Ellershaw, Walter	Hull.
28	Empson, Christopher	Beechwood, Sowerby Bridge.
29	Ford, Mrs.	Adel Grange.
46	George, Thomas Willington	Gledhow Grove.
33	Goodman, Benjamin	Gledhow House.
34, 35	Gott, Rev. John, D.D. (2 shares)	Woodsley House.
36–8	Gott William Ewart (3 shares)	Armley House.
61	Greenhow, Thomas Michael, M.D.	Newton Hall.
39	Harding, T. R.	St. Ann's Tower, Headingley.
40	Heaps, John William	Park View Villas, Cowper Street, Leeds.
41	Heaps, Charles Denison	Woodhouse Lodge, Woodhouse Lane.
42	Heaton, John Deakin, M.D., F.R.C.P.	Claremont, Leeds.
44	Hirst, Joseph	Wharfedale Lawn, Wetherby.
45	Holt, Joseph	Ogbeare Hall, Holsworthy, Devon.
30	Horsfall, John, M.A., F.R.C.S.	Hillary House.
24	Howgate, William	Park Row.
47	Ingham, Constantine	Clarendon Place.
48	Ingham, William	Belmont, Chorley Lane.
49	Jowitt, John	Harehills, Potternewton, near Leeds.
51	Kinnear, Thomas John, M.A.	Horsforth Hall.
52	Latimer, John	St. Mark's Villa, Woodhouse Lane.
55	Luccock, John Darnton	54, North Street.
57	Lupton, Francis	Beechwood, Roundhay.
53	Lupton, Francis Martineau, M.A.	Wellington Street.

26	Hey, Samuel, F.R.C.S.	Headingley.
104	Holroyd, James	
117	Howarth, Edward	Elmwood House.
36	Hudson, Henry	Oakwood, Roundhay.
37	Hudson, Robert John	Moorville, Burley-in-Wharfedale.
52	Ingham, Charles Alfred	Belmont, Chorley Lane.
38	Ingham, Henry Constantine	23, Lyddon Terrace.
120	Ingham, Samuel	Headingley Hall.
39	Jowitt, Robert Benson	Elmhirst.
40	Joy, Walker	1, Granville Terrace, Harrogate.
41	Kennedy, Thomas Stuart	Meanwood.
43	Kitson, James	Elmete Hall, Roundhay
46	Kitson, J. Hawthorne	Hyde Terrace.
47	Kitson, James, Jun.	Spring Bank, Headingley.
48	Kitson, Mrs.	Burley Hill, Leeds.
50	Leather, J. Towlerton	Leventhorpe Hall.
91*	Ludolf, Henry	
53	Lupton, Arthur	Headingley.
95	Lupton, Arthur Greenhow	Wellington Street.
54	Lupton, Joseph	The Elms, Chapel-Allerton.
55	Lupton, John	Moorlands, Headingley.
56	Lupton, Darnton	The Harehills, Roundhay Road.
57, 96-7, 99, 100	Lupton, Francis Martineau, M.A. (P) (5 shares)	Wellington Street.
88	McGuire, Thomas	Grosvenor Villa, Grosvenor Road, Headingley.
58	March, Joseph Ogden	Beech Grove House, Woodhouse Lane.
94	Malcolm, John Cooper	New Leeds.
59	Margerison, J. L.	4, Porchester Gate, Bayswater Road, London.
25*	Marsden, H. R.	
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
61	Marshall, John, M.A.	Headingley Lodge.
62	Marshall, Stephen Albert, B.A.	Shaw Lane, Headingley.

27	Maude, Edmund .	Middleton Lodge, Beeston.
63	Meggeson, George .	6, Cromer Terrace.
29*	Milner, Henry B. W.	
64*	Nickols, Richard	
65, 66	Nicholson, Albert H. (2 shares) .	Woodside, Belvedere, Kent.
67	Nunneley, A. G. .	9, Beech Grove Terrace.
68	Oxley, Henry .	Weetwood.
28	Passavant, P. W. .	De la Haye House, Chapeltown Rd.
11	Price, William Nicholson	Mount Pleasant.
93	Ralph, John .	Lifton House.
69	Reynolds, Richard, F.C.S.	Cliff Lodge, Hyde Park.
12	Routh, John .	Park Row.
112	Sagar-Musgrave, J. M. .	Red Hall, Shadwell.
92	Scattergood, Thomas .	41, Park Square.
119	Schunck, Edward .	Gledhow Wood, Gledhow, near Leeds.
51, 121	Stansfeld, T. W. (2 shares)	Weetwood Grove.
70	Stewart, G. M. .	13, Queen Square.
71*	Taylor, George .	
72	Taylor, Herbert .	1, Moorland Terrace.
73	Teale, T. Pridgin, M.A., F.R.C.S. .	North Grange, Headingley.
74	Teasdale, Washington .	Rosehurst, Headingley.
75	Tennant, Robert, M.P. (P)	Scarcroft Lodge, Shadwell.
76	Tennant, Thomas .	21, Blenheim Terrace.
78	Tetley, F. W. .	Fox Hill, Weetwood.
49	Thorp, John Hall .	Broomfield, Headingley.
79	Turner, Richard Bickerton	Bank of England, South Parade.
80	Wailes, William .	28, Albion Street.
111	Watson, William .	Elmwood, Harrogate.
81, 82*	Whitaker, John (2 shares)	
42	Whiting, John .	Regent Villas, Headingley.
83	Wicksteed, Joseph Hartley	3, Eldon Terrace, Woodhouse Lane.
31	Wilkinson, William .	St. Mary's Mount, Newton Hill.
85	Wilson, John .	Seacroft Hall.
17	Wilson, Richard .	Commercial Street.

35	Wood, Richard	Newton Villa, Potternewton.
118	Yates, Mortimer Broadley	Clarendon Road.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

1	Armistead, Joseph John	Netherleigh, Roundhay.
2	Atkinson, J. H.	16, East Parade.
3	Buckton, Joseph	49, Springfield Place.
4	Bulmer, John	4, Winfield Mount, Potternewton Lane.
6	Croft, Samuel	Gledhow.
7	Garlick, William	6, Hyde Terrace.
8	Hewitt, E. W.	Harrogate.
9	Ikin, Joshua Ingham, F.R.C.S.	19, Park Place.
11	Ramskill, Josiah	13, Meadow Lane.
12	Scriven, William Clarkson	Normandy Villas, Chapeltown.
13	Stratten, Rev. J. R.	Park Square.
14	Sykes, Henry Marshall	Roundhay.
15	Wigram, Reginald	Headingley Hill.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

1	Allbutt, T. Clifford, M.A., M.D., F.S.A., F.L.S.	Lyddon House, Virginia Road.
35	Armstrong, Prof. G. F., M.A.	24, Hyde Terrace.
2	Baines, Edward Manwaring	6, Ashwood Terrace, Headingley Hill.
3	Barr, Frederick Horatio	Mount View, Headingley Lane.
4	Barwick, J. M.	Low Hall, Yeadon.
5	Bedford, James	Woodhouse Cliff.
6	Benson, John	5, Beech Grove Terrace.
7	Best, Mrs.	39, Lyddon Terrace.
8	Bolland, W. T.	West Wood Mount, Scarborough.
9*	Botterill, John.	
10	Bousfield, Charles Edward	St. Mary's Mount.
11	Briggs, Riley	Springfield Mount.
12	Carbutt, E. H.	St. Ann's, Burley, near Leeds.

13	Carter, Robert Meek	Woodhouse Lane.
14	Corson, George	Headingley.
15	Dawson, Edwin	Cookridge.
16	Denny, T. G.	Victoria Road, Headingley.
17	Dixon, J. W.	5, Cavendish Road.
19	Eddison, Frederick	The Manor, Adel.
20	Eddison, Robert William	Adel.
21	Firth, William	Burley Wood House.
22	Ford, J. Rawlinson	Shaw Lane, Headingley.
23	Ford, T. B. P.	Bentham, near Lancaster.
24	Gascoigne, F. C. Trench	Parlington Park, near Garforth.
25	Green, Prof. A. H., M.A.	14, Ashwood Villas, Headingley.
26*	Greenwood, Thomas.	
27	Hargrave, John	St. Ann's Lodge, Burley, near Leeds.
28	Hepper, John	Clareville, Headingley.
80	Holmes, Joseph	Crown Chemical Works, Crown Street.
29	Holt, Henry Percy, C.E.,F.G.S.	Cavendish Road.
30	Holt, Joseph (P)	Wedderburn House, Harrogate.
31	Illingworth, William	Armley.
32*	Irwin, Edward.	
33	Irwell, Julius	Highfield House, Headingley.
34	Jackson, Rev. Edward, M.A.	9, Brunswick Place, North Street.
37	Kemplay, Miss	St. John's Place.
86	Lambert, Joseph	Rose Court, Headingley Lane.
38	Lawson, Thomas	Potternewton.
39	Lawson, John	The Manor, Bramhope, Otley.
41	Ledgard, Mrs.	Eller Close, Roundhay.
42	Lupton, Joseph	Armley.
43	Manning, H. J.	Broomhill, Chapel-Allerton.
40	Marshall, Prof. John, M.A.	2, St. George's Terrace, Shaw Lane.
44	McCheane, Rev. J. H., M.A.	Trinity Parsonage, Hyde Terrace.
45	March, George	Oaklands, Scarcroft.
46	Middleton, John William	Headingley.
47	Morley, Herbert Ogle	20, Victoria Terrace.
48	Myers, William Beswick	13, Park Square.

49	Myers, W. C.	Grove House, Roundhay.
50	Nelson, Henry	St. John's Cottage, St. John's Road.
51	Nunneley, Thomas	9, Beech Grove Terrace.
52	Nussey, George Henry	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah	Morley House, Headingley.
54	Nussey, Thomas	Virginia House, Headingley Hill.
55	Nussey, Samuel Leathley	Potternewton Hall.
56	Nussey, Peter	Spring Ville, Shaw Lane, Headingley.
58	Peel, Mrs.	Ackworth Park, Pontefract.
59	Ramsbotham, S. H., M.D.	16, Park Place.
60	Rayner, John	Moorfield Lodge, Headingley.
61	Read, Miss	Chapel-Allerton.
62	Riley, H. W.	Alma House, Headingley.
63*	Robinson, R. H.	
64*	Robinson, Richard.	
65	Rücker, Prof. A. W., M.A.	3, Moorland Terrace.
66	Sharpe, Miss	21, Victoria Place, Camp Road.
68	Smith, William Farrar	Hope Villa, Woodhouse Lane.
69	Smith, John Edward	9, Pancras Lane, Queen Street, Cheapside, London.
70	Somers, Francis	Fountain Terrace.
71	Stables, James	Horsforth.
72	Stead, G. A.	Ashwood Villas, Headingley.
74	Temple, Rev. Henry, M.A.	St. John's Vicarage, Woodhouse Lane.
36	Tennant, John	18, Albion Street.
18	Thornton, Charles	Blenheim Terrace.
76	Thorpe, Prof. T. E, Ph.D., F.R.S.	Headingley.
77	Titley, Anthony	Manor House, Victoria Grove, Headingley.
78	Titley, T. A.	Gledhow.
79	Tottie, J. W. (P)	Coniston Hall, Bell Busk.
82	Walker, H. B.	Headingley Hill.
83	Ward, Edmund	Denison Hall, Hanover Square.
57	Ward, George, F.C.S.	Buckingham Terrace.
84	Whiteley, Thomas	Blenheim Square.

85 Willson, J. J. . Newton Grove.
87*Young, John.

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Abbott, James . Woodhouse Lane.
Almond, Geo. Spedding . Westgate, Dewsbury.
Ambler, T. . 9, Park Place.
Appleyard, T. W., jun. . 8, De Grey Road.
Armistead, Edwin . Albion Street.
Armistead, J. W. . Rugby House, Meanwood Road.
Asquith, John Robert . Bond Place.
Atkinson, Miss . Clarendon Road.
Atkinson, Law . Clarendon Road.
Atkinson, Sergt. Tindal . 4, Hyde Villas, Clarendon Road.
Barran, Charles . 3, Mount Terrace, Chapel-Allerton.
Barran, John, jun. . St. Mary's Mount, Newton Hill.
Barran, A. , Chapel-Allerton Hall.
Bartholomew, W. H., C.E. . Ridge Way House.
Battye, R. C. . Newton Grove.
Battye, C. . North Lane, Headingley.
Beverley, A. . Grosvenor Terrace, Headingley.
Beverley, Robert . Woodsley Terrace.
Beverley, W. A. . Spring Road, Headingley.
Bickerdike, Rev. John, M.A. . St. Mary's Vicarage, Beckett Street, Burmantofts.
Birchall, Oswald . Ilkley.
Bland, Miss . Lilford House, Queen Square.
Braithwaite, James, M.D. . Clarendon Road.
Braithwaite, Richard Hale . Do.
Brigg, Matthew A. . Oak Bank, Headingley.
Brigg, Thomas S. . Do.
Browne, J. C. . 48, Briggate.
Bruce, William . Moorland Terrace.
Buckley, J. C. . 10, Blenheim Terrace.
Buckton, Richard . Wheatfield Lodge, Headingley.
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LEEDS

Philosophical & Literary Society

THE ANNUAL REPORT

For 1879-80.

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THE

SIXTIETH REPORT

OF

THE COUNCIL

OF THE

LEEDS

PHILOSOPHICAL & LITERARY

SOCIETY,

AT THE

CLOSE OF THE SESSION 1879-80.

Read at the Annual Meeting, May 4th, 1880.

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MDCCCLXXX.

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In the event of a dissolution of the Society, its property and effects, whether real or personal, shall not be disposed of for the individual benefit of the Members, but shall be appropriated for the advancement of Science, Literature, or Art in the Town of Leeds; and the mode of such appropriation shall, as to the proceeds of the real Estate, be determined by a majority of the Proprietary Members, and as to the proceeds of the personal Estate by a majority of both Proprietary and Ordinary Members, voting at Meetings convened specially for the purpose.

The Society shall be dissolved if the total number of Members (Proprietary and Ordinary) be reduced below fifty; and it shall be at any time lawful to dissolve it with the consent in writing of a majority of Members holding not less than two-thirds of the Proprietary Shares for the time being.

REPORT OF THE COUNCIL

Leeds Philosophical and Literary Society.

The Secretary has for disposal a limited number of New Proprietary and New Ordinary Tickets.

Minimum price of New Proprietary Share £15.
" " New Ordinary " £6.

Sept., 1880.

to have affected it to any material extent until a turn for the better has been given to mercantile affairs, so that there is every reason to believe that the prosperity of our Society, having received a temporary check, will speedily revive.

The following table shows the present numbers of the Society as compared with last year's :—

	1879.	1880.
Original Proprietary Members (78 shares)	71	72
New Proprietary Members (121 shares)	97	97
Ordinary Members	13	12
New Ordinary Members	82	82
Annual Subscribers of £1 1s.	225	204
Annual Subscribers of 7s. 6d.	217	199
Total	705	666

This shows a decrease in the number of Annual Subscribers of 39, viz., 21 Subscribers of £1 1s., and 18 of 7s. 6d. per annum.

The ordinary disbursements have been unusually light, so that the balance would not show a much larger amount due to the bankers than at the beginning of the year, were it not for the fact that the general account has had to be charged with the deficiency of the new gallery and cases fund, the donations to which produced £84 2s. less than the amount expended. It is hoped that the general account will ultimately be relieved of this charge, by a sufficient number of further donations to complete the special fund, and the Council may confidently say for their successors that they will gladly receive any contributions towards this object from any other members or subscribers who may desire to help in this important and enduring extension of the Museum.

Among the donations which the Council have had the pleasure to acknowledge during the year, Mr. T. Emsley, of Burley-in-Wharfedale, has renewed his annual cheque for £10, which deserves special mention as a very welcome gift.

The lectures and papers for the session were as follows:—

1. "The Modern Study of Zoology." Prof. A. Milnes Marshall, M.A., D.Sc. *Read Oct. 14th*, 1879.
2. "The Picts' Wall." J. I. Coates, F.R.A.S. *Read Nov. 4th*, 1879.
3. "The Tasmanian Aborigines: a History of an Extinct Race." Prof. W. H. Flower, L L.D., F.R.S., F.L.S., F.G.S., F.R.C.S. *Read Dec. 2nd*, 1879.
4. "The Philosophy of Architectural Design." H. H. Statham. *Read Dec. 16th*, 1879.

5. "Pindar and Greek Lyric Poetry." John Ralph, M.A. *Read Jan. 6th*, 1880.
6. "Our Earliest British Ancestors." Prof. W. Boyd Dawkins, M.A., F. R. S. *Read Jan. 20th*, 1880.
7. "Cavour and the Regeneration of Italy." Oscar Browning, M.A. *Read Feb. 3rd*, 1880.
8. "Fish and Fisheries." Rev. Canon Tristram, LL.D., M.A., F.R.S. *Read Feb. 17th*, 1880.
9. "Norway and Lapland." Lieut. G. T. Temple, R.N. *Read March 2nd*, 1880.
10. "German Epic Poetry: The Nibelungenlied." R. W. Macan, M.A. *Read March 16th*, 1880.
11. "Modes of Motion." Very Rev. B. M. Cowie, B.D., Dean of Manchester. *Read April 6th*, 1880.
12. "The Battle of Marston Moor." Prof. C. Ransome, M.A. *Read April 20th*, 1880.

The Conversazione was attended by a large number of visitors as well as of members and subscribers. Several rooms were lighted by the Mori-Griffin Electric Lamp. Crossley's Transmitter for increasing the volume of sound in the Telephone, Edison's Sound Mill, and Hunning's Micro-Telephone were exhibited, and demonstrations of their peculiar properties were made; and various other scientific instruments were shown. The Society was again indebted to many contributors for the loan of valuable pictures and other objects of interest which greatly enhanced the success of the meeting. A remarkably fine collection of etchings formed a special centre of attraction. A glee party enlivened the proceedings at intervals during the evening, and a series of views were exhibited by the oxyhydrogen light, the subject this year being original photographs of Cyprus.

Considerable attention has been given by the Council to the Rules of the Society, which in some respects were

not in harmony with the Trust Deed, and in others conflicted with the established practice of the Society. A Committee was therefore entrusted with the duty of revising the Rules and suggesting necessary alterations. That Committee presented a Report in which it was pointed out that the Trust Deed (apparently by inadvertence) does not exempt from Annual Subscription any Original Proprietary Members who might be holders at the same time of other descriptions of Shares, whereas, the existing Rules, on the other hand, give such exemption to *all* Original Proprietary Members. The Committee, therefore, proposed to limit the privilege to those to whom it was promised on the first creation of New Proprietary and New Ordinary Shares, but that the operation of the Rule as to forfeiture upon unprotected New Proprietary and Ordinary Shares held by Original Proprietary Members should be postponed until October, 1881.

The Council have not undertaken to recommend a completely new body of laws, believing that the alterations suggested by the Committee will meet present requirements; and they have issued their proposals to the Members, and invite their decision thereon at the present meeting.

The number of visitors who have passed the Museum turnstile during the year is 29,791, as against 31,651 of the year before.

Some progress has been made during the past year in the rearrangement and extension of the Museum. A number of preparations of Fishes and Amphibia have been put up, chiefly by the glycerine-jelly process described in last year's Report. The mode of suitably

displaying flat vessels filled with jelly has required careful consideration, and a number of trials have been made with different kinds of supports. It is believed that a satisfactory plan has been at length devised, and the cases in the new gallery will be gradually supplied with fittings suitable for preparations of this and other kinds. A case containing twenty-five glycerine-jelly preparations, and intended to illustrate a convenient way of displaying them, was exhibited by the Society in the Temporary Museum of the British Association at Sheffield. The cleaning and rearrangement of the Insect collections has proceeded, but the work has proved unexpectedly slow, and has been frequently interrupted by other duties. The general collection of Birds has been cleaned, and many of the labels renewed.

Among the new acquisitions the Council have specially to mention a large addition to the collection of bones and teeth of Mammalia found in the fissure at Raygill, and presented by Mr. P. W. Spencer of Lothersdale. The circumstances under which these remains were accumulated and discovered have been previously explained to the members of the Society. (Annual Report for 1874-5, p. 7). The Bison and the Bear have been added to the species there enumerated, and the animals previously recorded are now much more largely represented in our collection. A full account of the discovery will be of much interest to palæontologists, and as soon as the excavation has been completed, the work of comparison and description will be taken in hand. The Council of the Yorkshire Geological Society have made an appeal to the public for money to promote

the complete and systematic exploration of the fissure, and the hearty co-operation of Mr. Spencer, the proprietor of the quarry, is promised. It is much to be desired that the work should be energetically and carefully carried out, that full details of every significant local circumstance should be recorded, and that the fossil remains should be preserved complete and in one place for future study.

A valuable collection of Gums and Resins has been presented by Mr. Edward Atkinson, Curator in Zoology. The series includes several rare and fine specimens, and is interesting from its extent and variety.

Mr. Abraham Clapham, formerly of Leeds, lately of Scarborough, and now of Kensington, has quite recently presented to the Society his fine collection of Birds, the most important part of which consists of Birds of Prey, to which Mr Clapham's attention has been particularly given for many years. This most welcome donation includes examples of some of the very rarest British Birds ; all are in excellent condition, and suitably mounted for exhibition in a public museum. A special notice of the more remarkable specimens in the Clapham Collection will be found in an appendix to this Report.

Other donations and additions are recorded in the classified list.

The Council have the painful duty of recording the death of a colleague who, ever since his first election on the executive body of this Society, in 1845, had been constant in his attendance at its meetings. By the removal of Dr. Heaton, the Council have lost one of their most zealous and experienced colleagues, and the Society

one of its most eminent and useful members. His name is identified with all the most prominent events of the Society's history during the past 35 years, and to him was due, in no small measure, its prosperity and growing importance. He rendered valuable aid in the collection of funds for the extension of the Society's buildings and collections at various times; he read many original papers on scientific subjects at general meetings of the Society; he was Honorary Curator of the Library from the first creation of that office in 1857, to the time of his death; he was Vice-President in 1866, 1867, and again from 1872 to 1876, and President in four successive years, viz., from 1868 to 1872.

Summary of Meteorological Observations taken at the Philosophical Hall, Leeds, during the year, 1879.

1879.	Mean Temperature.	Mean Height of Barometer.	Total Amount of Rain in Inches.
January...	33·4 Fah.	29·898	1·320
February	37·5 ,,	29·373	2·818
March	40·7 ,,	29·803	1·427
April	42·5 ,,	29·555	2·750
May	48·5 ,,	29·847	1·478
June	55·6 ,,	29·594	4·433
July	55·8 ,,	29·592	3·029
August	59·4 ,,	29·602	4·104
September	55·6 ,,	29·773	2·055
October...	49·1 ,,	29·945	·705
November	41·4 ,,	30·076	1·220
December	35·6 ,,	30·099	1·335

The mean monthly temperature was 46·2.

The mean monthly height of the barometer was 29·763 inches.

The total rainfall for the year was 26·674 inches.

The greatest degree of heat, as indicated by the thermometer in the sun, was 97° on August 23rd; the greatest in the shade was 78° on August 12th; and minimum 12° on December 7th.

The greatest barometric pressure was on December 13th, being 30·588 inches, the temperature of the mercury being 46°; the least pressure was on April 7th, being 28·710 inches, the temperature of the mercury being 54°.

The greatest fall of rain (during 24 hours) was on June 7th, being 1·520 inches.

Latitude, 53° 48′ 20″ N.; longitude, 1° 33′ W. Height of the cistern of the barometer above the mean level of the sea, 137 feet; height of the rain-gauge above the street, 46 feet.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

STATEMENT OF RECEIPTS AND EXPENSES FOR THE YEAR 1879-80.

RECEIPTS.	£	s.	d.	£	s.	d.
To Balance in hand, May 1, 1879...				0	7	0
,, Annual Subscriptions, viz.—						
78 New Proprietary Members, at 21/-...	81	18	0			
12 Original Ordinary ditto 42/-...	25	4	0			
65 New Ordinary ditto 21/- ..	68	5	0			
169 Annual Subscribers, at 21/-...	177	9	0			
14 New ditto 21/-...	14	14	0			
156 Annual Subscribers, at 7/6...	58	10	0			
18 New ditto 7/6...	6	15	0			
,, Arrears	12	6	6			
				445	1	0
,, Rent, viz.—						
Cellars	63	0	0			
Lecture Room	106	0	0			
				169	0	0
,, Receipts from Visitors to Museum ...	124	2	7			
,, ,, ,, Conversazione...	30	10	0			
				154	12	7
,, Sale of Catalogues	0	10	7			
,, Sundries	0	6	9			
				0	17	4
,, Donations, viz.—						
,, Mr. T. Emsley	10	0	0			
,, A Friend	5	0	0			
				15	0	0
,, Balance due to Bank				130	19	11
				£915	17	10

DISBURSEMENTS.	£	s.	d.	£	s.	d.
By Balance due to Bank, May 1st, 1879				33	18	3
,, Repairs and Alterations	16	15	11			
,, Taxes and Rates	1	16	2			
,, Fire Insurance	15	0	0			
,, Coals, &c.	14	19	3			
,, Gas	15	11	6			
,, Cleaning	9	10	11			
				73	13	9
,, Salaries, viz.—						
Curator	150	0	0			
Secretary	100	0	0			
Assistant	55	14	0			
Porter	67	3	0			
,, Fee to Auditor	2	2	0			
				374	19	0
,, Collections, viz.—						
Geological	0	17	3			
Industrial	0	2	6			
Zoological	48	19	1			
Library...	26	12	4			
				76	11	2
,, Postages	18	0	3			
,, Advertising and Printing	50	15	8			
,, Lectures	95	9	5			
,, Conversazione Expenses	65	13	8			
,, Collector's Commission	8	9	0			
,, Bankers' Commission...	5	9	0			
,, Sundries	15	5	2			
				259	2	2
,, Heating Apparatus	8	9	11			
,, New Gallery and Cases, Balance of Special Account	84	2	0			
				92	11	11
,, Balance in hand—Cash	4	18	6			
,, Petty Cash ...	0	3	1			
				5	1	7
				£915	17	10

July 10th, 1880.

Audited and found correct,

CHAS. BEEVERS.

LIST OF DONATIONS AND ADDITIONS

TO THE

SOCIETY'S MUSEUM AND LIBRARY,

1879-80.

GEOLOGY.

Spirifera Tasmaniensis, Maitland Coal Mine, N.S.W. (2 specimens).....	S. Woolfson, 3, Love Lane, Eastcheap, E.C.
Collection of Miscellaneous Fossils, including Lower Jaw of Mammoth	R. Musgrave, Coventry.

ZOOLOGY.

Monstrous Puppy of thoroughbred Greyhound	Joseph Allanson, Belgrave Square, 2, New Briggate, Leeds.
Mygale, Honduras.....	Chas. Elvin, 1, Darlington Street, Leeds
Myxine glutinosa (2 specimens) Mygale...	C. G. Wheelhouse.
Lemur catta (2 specimens)	L. Kitching, 50, Caledonian Road.
Nests of Ostinops cristatus and Glaucis hirsuta.....	C. E. Lister, Shibden Hall.
Donation of 76 Species of Land and Marine Shells, including Waldheimia flavescens, Kraussia Lamarckiana, Trochocochlea concamerata, Axinia holoserica, Stomatella imbricata, Teinotus asinina, Scutus elongatus, Helix phthisica, H. Ambrosia, H. meta, H. Hunteri, H. Mazee, Pupina Angasi, Bulimus porphyrostomus, B. Strangei, B. Founaki, and B. Dux, Collection of Birds from Australia and adjacent islands	John Brazier, C.M.Z.S., Sydney, N.S.W.
Collection of Birds, chiefly British Birds of Prey (see Appendix)...	Abraham Clapham, Kensington, late of Scarborough.

TECHNOLOGY.

Collection of Gums and Resins: Manilla Copal, hard, Do. soft (Philippines), Kowrie Copal (New Zealand), Madagascar Copal, White Angola Copal, Very rough common Kowrie, Red Angola Copal, Animi, true fossil Copal (Zanzibar), Rough Sierra Leone Copal, Gum Damar (Batavia), Orange Shellac, Stick Lac (India, Siam), White Lac, Black boy Gum, Red Angola Copal, Gum Juniper or Sandarach (Mogador, N. Africa), Seed Animi, Gum Thus—Frankincense (North Carolina, U.S.), Lisbon Copal, Soft Copal, Chakazzi—semi-fossil Copal (Zanzibar), Mauritius Animi, Animi (with flies), Fruit of Trachylobium Hornemannianum (Hayne), Zanzibar Animi, Gum Mastic, Dragon's Blood...	E. Atkinson, F.L.S.

PUBLICATIONS.

Catalogue of the Persian Manuscripts in the British Museum, Vol. I., by C. Rien, Ph. D., 1879	Trustees of the British Museum.
Catalogue of Greek Coins, Macedonia, &c., by B. V. Head, 1869.....	
Catalogue of Ancient Charters, Vol. IV., 1878.....	
Catalogue of Coins, Vol. IV., by S. Lane Poole, 1879.....	
Catalogue of Lepidoptera Heterocera, Pt. III., by A. G. Butler, 1879	
Types of Coleoptera, Vol. I., by C. O. Waterhouse, 1879	
Descriptions of New Species of Hymenoptera in the British Museum, by F. Smith, 1879	
United States Geological Survey, Birds of the Colorado Valley, Pt. I., by Elliott Coues, 1878	Dr. Hayden, United States Geologist, Washington.
United States Geological and Geographical Survey of Colorado and adjacent Territory, 1870	
Bulletin of the United States Geological and Geographical Survey, Vol. IV., No. 4	

Catalogue of the Publications of the United States Geological and Geographical Survey of the Territories .... Illustrations of the Cretaceous and Tertiary Plants of the Western Territories of the United States	Department of the Interior, U. States.
Eighth, Ninth, and Tenth Annual Reports of the Geological Survey of Indiana, 1876-77-78	John Collett, Chief of the Bureau of Statistics and Geology, U. States
A Handbook of Double Stars, by Ed. Crossley, F.R.A.S., J. Gledhill, F.R.A.S., and J. M. Wilson, M.A., F.R.A.S., 1879	Edward Crossley, F.R.A.S.
Account of the operations of the Great Trigonometrical Survey of India, Vols. II., III., and IV.	The Secretary of State for India.
List of the Vertebrated Animals now or lately living in the Gardens of the Zoological Gardens, London, 1879	Zoological Society.
Results of Astronomical Observations made at the Royal Observatory, Cape of Good Hope, during 1876, by E. J. Stone, M.A., F.R.S.	Astronomer Royal.
Proceedings of the Ninth Convention of American Instructors of the Deaf and Dumb, 1878 ..... Annual Reports of the Comptroller of the Currency of the United States, 1878 and 1879.....	Smithsonian Institution.
A History of the British Marine Polyzoa, by Rev. Thomas Hincks, B.A., F.R.S., Vols. I. and II., 1880.....	Purchased.
Legenda Sanctorum. The proper Lessons for Saints' days according to the use of Exeter, compiled by John de Grandisson, Bishop, 1327, Vol. II., Pt. III., Fasciculus I.	R. Chorley, Leeds.
Cambridge University Extension, Notices of Lectures in Leeds, and Reports, 1874-77	University Extension Union, Leeds.
Descriptions of eight new Species of Australian Shells (pamphlet)	The Author, John Brazier. C.M.Z.S., Sydney, N.S.W,
A Memoir of Samuel Woodward (pamphlet)	The Author, H. B. Woodward, F.G.S., Cawston Road, Aylsham.

W. Daniels, Artist (pamphlet)	The Author, Wm. Tirebuck, 9, Cobden Place, Leeds.
Hematite Ores and Hematite Iron (pamphlet).....	The Author, H. Eccles, F.C.S.

PERIODICALS.

WEEKLY.

Nature.....	Purchased.

BI-MONTHLY.

Journal of the Royal Microscopical Society	The Society.

MONTHLY.

Annals and Magazine of Natural History Geological Magazine.....	Purchased.
Monthly Notices of the Proceedings of the Royal Society of Tasmania (yearly) ...	Royal Society of Tasmania.
Journal of the Chemical Society	Chemical Society.
Monthly Notices of the Royal Astronomical Society.....	Royal Astronomical Society.
Atti della R. Accademia dei Lincei	The Society.
Monthly Journal of Science.....	Purchased.

QUARTERLY.

Quarterly Journal of Microscopical Science	Purchased.
Quarterly Journal of Geological Society...	Geological Society.
Quarterly Returns of Marriages, Births, and Deaths.....	Registrar General.
Journal of the Royal Historical and Archæological Association of Ireland...	Royal Historical and Archæological Association of Ireland.
Journal of the Anthropological Institute.	Anthropological Institute.
Proceedings of the Geologists' Association	Geologists' Association.
Zeitschrift für Wissenschaftliche Zoologie	Purchased.
Canadian Journal of Science, Literature, and History	Canadian Institute, Toronto.

ANNUALLY.

Philosophical Transactions	Purchased.
Mineral Statistics of the United Kingdom	Director General of the Geological Survey.

Annual Report of Yorkshire Philosophical Society	Yorkshire Philosophical Society.
Proceedings of the Glasgow Philosophical Society	Glasgow Philosophical Society.
Mittheilungen der Kais. und Königl. Geographischen Gesellschaft in Wien	Royal Imperial Geographical Society of Vienna.
Proceedings of the Academy of Natural Sciences of Philadelphia (3 pts. a year)	Academy of Natural Sciences of Philadelphia.
Radcliffe Astronomical and Meteorological Observations	Radcliffe Trustees.
Proceedings of the Royal Society of Edinburgh ..... Transactions of do	Royal Society of Edinburgh.
Bulletin of the Essex Institute.....	Essex Institute, U.S.A.
Publications of the Ray Society	Purchased.
Abstract of the Proceedings of the Liverpool Geological Society	Liverpool Geological Society.
Transactions of the Edinburgh Geological Society	Edinburgh Geological Society.
Kongliga Svenska Vetenskaps Akademiens Handlingar Do. do. Lefnadsteckninghar Ofversigt af Kongliga Vetenskaps Akademiens Förhandlingar ..... Bihang till Kongliga Vetenskaps Akademiens Handlingar	Royal Swedish Academy of Sciences.
Natural History Transactions of Northumberland and Durham	Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne, and Tyneside Naturalists' Field Club.
Monographs of the Palæontographical Society	Purchased.
Proceedings of the Minnesota Historical Society ..... Annual Report of the Minnesota Historical Society	Minnesota Historical Society, St. Paul, Minnesota, U.S.
Proceedings of the Berwickshire Naturalists' Club	Berwickshire Naturalists' Club.
Proceedings of the Liverpool Literary and Philosophical Society	Liverpool Literary and Philosophical Society.
Proceedings of the Boston Society of Natural History..... Memoirs of do.	Boston Society of Natural History.

Transactions of the Historic Society of Lancashire and Cheshire	Historic Society of Lancashire and Cheshire.
Memoirs of the Royal Astronomical Society	Royal Astronomical Society.
Transactions and Proceedings of the New Zealand Institute	New Zealand Institute.
Proceedings of the Warwickshire Naturalists' and Archæologists' Field Club	Warwickshire Naturalists' and Archæologists' Field Club.
Annual Report and Papers of the Associated Architectural Societies	Associated Architectural Societies.
Journal and Annual Report of the Royal Institution of Cornwall.....	Royal Institution of Cornwall.
British Association Report	British Association.
Annual Report of the Royal Cornwall Polytechnic Society	Royal Cornwall Polytechnic Society.
Annual Report of the Warwickshire Natural History and Archæological Society	Warwickshire Natural History and Archæological Society.
Annual Report of Harvard College	The College.
Annual Report of Harvard University	The University.
Annual Report of the U.S. Patent Office	United States Patent Office.
Annual Report of the Hull Literary and Philosophical Society	Hull Literary and Philosophical Society.
Annual Report and Proceedings of the Belfast Naturalists' Field Club	Belfast Naturalists' Field Club.
Annual Report of the Geologists' Association	Geologists' Association.
Annual Report of the Museum of Comparative Zoology at Harvard College, U.S.A.....	Museum of Harvard College, Cambridge, Mass.
Annual Report of the Birkenhead Literary and Scientific Society	Birkenhead Literary and Scientific Society.
Journal and Proceedings of the Royal Society of New South Wales	Royal Society, New South Wales.
Annual Report, Department of Mines, New South Wales.....	The Department, New South Wales.
Annual Report of the Sheffield Literary and Philosophical Society	Sheffield Literary and Philosophical Society.
Proceedings of the Royal Society	Royal Society.
Smithsonian Miscellaneous Collections ... ,, Contributions to Knowledge Report of the Smithsonian Institution ...	Smithsonian Institution.

Memoirs of the Manchester Literary and Philosophical Society ..... Proceedings do. (about fortnightly, Oct. to April).....	Manchester Literary and Philosophical Society.
Journal of the Royal Dublin Society (about once a year)	Royal Dublin Society.
Geological Record	Purchased.
Proceedings of the Royal Institution (2 pts. a year).....	Royal Institution of Great Britain and Ireland.
Proceedings of the Zoological Society (4 pts. a year—June, Aug., Oct., April)	Zoological Society.
Edinburgh Astronomical Observations ...	Royal Observatory, Edinburgh.
Proceedings of the American Academy of Arts and Sciences	American Academy of Arts and Sciences.
Transactions of the American Philosophical Society..... Proceedings do. (several pts. a year)	American Philosophical Society.
Abridgments of Specifications of Patents, with Indices	Commissioner of Patents.
Transactions of the Academy of Sciences of St. Louis.....	The Academy of Sciences of St. Louis, U.S.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Förhandlinger	Royal Danish Society of Sciences.
Proceedings of the Royal Irish Academy	Royal Irish Academy.
Journal of the Royal Geological Society of Ireland	Royal Geological Society of Ireland.
Transactions of the Manchester Geological Society	Manchester Geological Society.
Transactions of the Leicester Literary and Philosophical Society.....	Leicester Literary and Philosophical Society.
Annual Report of the Leeds Naturalists' Club and Scientific Association	Leeds Naturalists' Club and Scientific Association.
Proceedings of the Yorkshire Geological and Polytechnic Society	Yorkshire Geological and Polytechnic Society.
Proceedings of the Davenport Academy of Natural Sciences	Davenport Academy of Natural Sciences, Iowa, U.S.
Report of the Middlesex Hospital	The Hospital.
Calendar and Annual Report of the Yorkshire College	The College.

LIST OF OFFICERS AND COUNCIL,

1880-81.

OFFICERS.

PRESIDENT	T. CLIFFORD ALLBUTT, M.D., M.A., F.R.S.
VICE-PRESIDENTS	REV. J. H. McCHEANE, M.A. REV. JOHN GOTT, D.D.
TREASURER	HENRY OXLEY.
HONORARY SECRETARIES	RICHARD REYNOLDS, F.C.S. A. W. RÜCKER, M.A.
HONORARY CURATOR IN GEOLOGY	A. H. GREEN, M.A., F.G.S.
HONORARY CURATORS IN ZOOLOGY	EDWARD ATKINSON, F.L.S. T. CLIFFORD ALLBUTT, M.D., M.A., F.R.S.
HONORARY CURATOR IN ETHNOLOGY AND WORKS OF ART	J. E. EDDISON, M.D.
HONORARY LIBRARIAN	T. E. THORPE, Ph.D., F.R.S.

The above officers, with the following gentlemen, form the

COUNCIL.

E. FILLITER, F.G.S.
H. P. HOLT, F.G.S.
J. HORSFALL, M.A., F.R.C.S.
J. I. IKIN, F.R.C.S.
A. G. LEGARD, M.A.
F. M. LUPTON, M.A.
JOHN MARSHALL, M.A.
W. NICHOLSON PRICE.
JOHN RALPH, M.A.
T. SCATTERGOOD.

General Curator	LOUIS C. MIALL, F.G.S.
Secretary	W. F. HUSBAND, LL.B.
Curator's Assistant	H. CROWTHER.

LIST OF MEMBERS AND SUBSCRIBERS,

1880-81.

**Members deceased, whose shares have not been transferred*

PROPRIETARY MEMBERS,

EXEMPT FROM ANNUAL SUBSCRIPTIONS.

2	Aldam, Wm.	Frickley Hall, Doncaster.
3	Armitage, Wm. James	
4	Arthington, Robert	73, Hunslet Road
1	Atkinson, John William	13, Woodhouse Square.
5	Baines, Edward	St. Ann's Hill, Burley, near Leeds
6	Barran, John, M.P.	Chapel-Allerton Hall.
20	Battye, James C.	Ribston, near Wetherby.
18	Bilbrough, Alfred	15, Beech Grove Terrace.
8	Binks, Benj., Junr.	York Place.
9	Broadhead, Henry	Chapel-Allerton.
11	*Brown, James	
31, 62	Brown, Samuel James (2 shares)	Loftus Hill, near Knaresborough.
13, 14	Calverley, Edmund (2 shares)	Oulton Hall.
15	Charlesworth, C. H.	Settle.
16	*Chorley, Henry	
17	Clapham, Samuel	4, Marlborough Terrace, Belle Vue Road.
19	*Coghlan, William	
21	Cudworth, John W.	52, Mount Preston.
22	Denison, William Beckett	Nun-Appleton, York.
23	Dibb, Mrs. Elizabeth	Vernon House, Brondesbury, London.
25	Eddison, John Edwin, M.D.	29, Park Square.
26	Ellershaw, John	Oakfield, Kirkstall.

27	Ellershaw, Walter	Hull.
28	Empson, Christopher	Beechwood, Sowerby Bridge.
29	Ford, Mrs.	Adel Grange.
46	George, Thomas Willington	Gledhow Grove.
33	Goodman, Benjamin	Gledhow House.
34, 35	Gott, Rev. John, D. D. (2 shares)	Woodsley House.
36-8*	Gott, William Ewart (3 shares)	
61	Greenhow, Thomas Michael, M.D.	Newton Hall.
39	Harding, T. R.	St. Ann's Tower, Headingley.
40	Heaps, John William	Park View Villas, Cowper Street, Leeds.
41	Heaps, Charles Denison	Avenue House, Woodhouse Lane.
42*	Heaton, John Deakin, M.D., F.R.C.P.	
44	Hirst, Joseph	Wharfedale Lawn, Wetherby.
45	Holt, Joseph	Ogbeare Hall, Holsworthy, Devon.
30	Horsfall, John, M.A., F.R.C.S.	Hillary House.
24	Howgate, William	Park Row.
47	Ingham, Constantine	Clarendon Place.
48	Ingham, William	Belmont, Chorley Lane.
49	Jowitt, John	Harehills, Potternewton, near Leeds.
51	Kinnear, Thomas John, M.A.	Horsforth Hall.
52	Latimer, John	St. Mark's Villa, Woodhouse Lane.
55	Luccock, John Darnton	54, North Street.
57	Lupton, Francis	Beechwood, Roundhay.
53	Lupton, Francis Martineau, M.A.	Wellington Street.
56	Lupton, Sydney, M.A.	Harrow-on-the-Hill.
58*	Makins, Charles	
59	Marshall, Arthur, F.G.S.	Headingley House.

60	Marshall, Rev. Edmond Henry .	Weetwood Hall.
63	Marshall, Henry Cowper .	Weetwood Hall.
64, 65*	Marshall, J. G., F.G.S. (2 shares)	
66	Marshall, Reginald Dykes	Cookridge Hall.
67	Marshall, Victor Alexander Ernest, B.A. .	Monk Coniston, Ambleside.
7	North, John .	East Parade.
68	Nunneley, J. A., M.B. .	22, Park Place.
69	Rhodes, John .	Potternewton House.
70	Shepherd, John .	Beech Grove House, Tadcaster.
32	Smith, Henry Stooks .	Headingley.
77*	Smith, John Metcalfe	
10	Streatfield, Richard James	The Rocks, Uckfield, Sussex.
71	Tatham, George .	Springfield Mount.
50	Taylor, John Charles .	Oatlands, Leeds.
72	Teale, Thomas Greenwood	Bentley House, Meanwood.
73	Teale, Mrs. .	St. James's Lodge.
43	Tennant, Robert .	Scarcroft Lodge, Shadwell.
74	Tottie, Mrs. John William	Coniston Hall, Bell Busk, Leeds.
54	Waite, James Butler .	Belvidere, Newton Road.
75	Walker, Edward .	15, Springfield Mount.
76	Ward, William Sykes, F.C.S. .	Denison Hall, Hanover Square.
12	Wilson, Rev. Benjamin .	Bank House, Mirfield.
78	Wilson, Edmund .	8, Osborne Terrace.

NEW PROPRIETARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

1	Atkinson, Daniel Hopkin	16, Brunswick Place.
32	Atkinson, Edward, F.L.S., .	Eldon House, Woodhouse Lane.
116	Baines, Frederick .	Weetwood Lodge.
2	Balme, E. B. Wheatley .	Cote Wall, Mirfield.
91	Bedford, James .	Woodhouse Cliff.

15	Bilbrough, Joseph Brooks	15, Beech Grove Terrace.
3	Birchall, Edward .	Inglemoor House, Moorland Road.
13	Boothman, David .	Rough House, Headingley.
4	Boothroyd, W. .	Grove Mill, Headingley.
33-4,84	Brown, S. J. (3 shares) (P)	Loftus Hill, near Knaresborough.
5, 6	Brown, William (2 shares)	Bardon Grange, Weetwood.
7	Buckton, George .	Roundhay.
89	Buckton, Joshua .	Carr House, Meanwood.
8	Buckton, Walter .	49, Springfield Place.
113	Burkill, Isaac Henry .	Little Morton, East Retford.
90	Butler, J. O. .	The Abbey House, Kirkstall.
86	Carter, J. B. .	Elm House, Potternewton.
9	Chadwick, William .	Arksey, Doncaster.
10*	Cliff, Joseph	
14	Conyers, W. H. .	Ilkley.
45	Craven, John .	3, Beech Grove Terrace.
98	Craven, Joseph .	1, Beech Grove Terrace.
77	Crofts, John	
30*	Derham, Mrs. L. E. .	
18*	Donisthorpe, G. E.	
19	Fairbairn, Sir Andrew, M.A., M.P. .	15, Portman Square, London, W.
20*	Farrer, James	
105	Ferguson, William .	Ridge House, Woodhouse Lane.
21	Filliter, Edward, F.G.S. .	West Mount, Clarendon Road.
87	Gott, Rev. John, D.D. (P)	Woodsley House.
101-3, 106-10, 114-15,	*Gott, Wm. Ewart (P) (10 shares)	
22	Hall, Thomas .	Heath Cottage, Moor Allerton.
23	Hargrave, James .	Willaston House, Harrogate.
16	Harvey, William .	West View, North Hill Road.
24	Henderson, Rev. W. G., D.C.L. .	Grammar School.
44	Hepper, Mrs. J. H. .	Wortley, near Leeds.
26	Hey, Samuel, F.R.C.S. .	Headingley.
104	Holroyd, James .	

117	Howarth, Edward	Elmwood House.
36	Hudson, Henry	Oakwood, Roundhay.
37	Hudson, Robert John	The Poplars, Woodlesford.
52	Ingham, Charles Alfred	Belmont, Chorley Lane.
38	Ingham, Henry Constantine	23, Lyddon Terrace.
120	Ingham, Samuel	Headingley Hall.
39	Jowitt, Robert Benson	Elmhirst.
40	Joy, Alfred Lomas	Weetwood Mount, Leeds.
41	Kennedy, Thomas Stuart	Meanwood.
43	Kitson, James	Elmete Hall, Roundhay.
46	Kitson, J. Hawthorne	Cardigan House, Headingley.
47	Kitson, James, Jun.	Spring Bank, Headingley.
48	Kitson, Mrs.	Burley Hill, Leeds.
50	Leather, J. Towlerton	Leventhorpe Hall.
53	Lupton, Arthur	Headingley.
95	Lupton, Arthur Greenhow	Wellington Street
54	Lupton, Joseph	The Elms, Chapel-Allerton.
55	Lupton, John	Moorlands, Headingley.
56	Lupton, Darnton	The Harehills, Roundhay Road.
57, 96-7, 99, 100	Lupton, Francis Martineau, M.A. (P) (5 shares)	Wellington Street.
88	McGuire, Thomas	Grosvenor Villa, Grosvenor Road, Headingley.
94	Malcolm, John Cooper	New Leeds.
59	Margerison, J.L.	4, Porchester Gate, Bayswater Road, London.
25	Marsden, Mrs. H. R.	Avenue House, Woodhouse Lane.
60	Marshall, Thomas, M.A.	Highfield, Chapel-Allerton.
61	Marshall, John, M.A.	Headingley Lodge.
62	Marshall, Stephen Albert, B.A.	Shaw Lane, Headingley.
27	Maude, Edmund	Middleton Lodge, Beeston.
63	Meggeson, George	6, Cromer Terrace.
29*	Milner, Henry B. W.	
64	Nickols, Richard	Hill Top, Bramley.

65, 66	Nicholson, Albert H. (2 shares)	
67	Nunneley, A. G.	9, Beech Grove Terrace.
68	Oxley, Henry	Weetwood.
28	Passavant, P. W.	De la Haye House, Chapeltown Rd.
11	Price, William Nicholson	Mount Pleasant.
93	Ralph, John, M.A.	Lifton House.
69	Reynolds, Richard, F.C.S.	Cliff Lodge, Hyde Park.
12	Routh, John	Park Row.
112	Sagar-Musgrave, J. M.	Red Hall, Shadwell.
92	Scattergood, Thomas	41, Park Square.
119	Schunck, Edward	Gledhow Wood, Gledhow, near Leeds.
51, 121	Stansfeld, T. W. (2 shares)	Weetwood Grove.
70	Stewart, G. M.	13, Queen Square.
71	*Taylor, George	
72	Taylor, Herbert	
73	Teale, T. Pridgin, M.A., F.R.C.S.	North Grange, Headingley.
74	Teasdale, Washington	Rosehurst, Headingley.
75	Tennant, Robert, (P)	Scarcroft Lodge, Shadwell.
76	Tennant, Thomas	21, Blenheim Terrace.
78	Tetley, F. W.	Fox Hill, Weetwood.
58	Thompson, Chas. Frederick	Beech Grove House, Woodhouse Lane.
49	Thorp, John Hall	Broomfield, Headingley.
79	Turner, Richard Bickerton	Bank of England, South Parade.
80	Wailes, William	28, Albion Street.
111	Watson, William	Elmwood, Harrogate.
81, 82	*Whitaker, John (2 shares)	
42	Whiting, John	Regent Villas, Headingley.
83	Wicksteed, Joseph Hartley	3, Eldon Terrace, Woodhouse Lane.
31	Wilkinson, William	St. Mary's Mount, Newton Hill.
85	Wilson, John	Seacroft Hall.
17	Wilson, Richard	Commercial Street.
35	Wood, Richard	Newton Villa, Potternewton.
118	Yates, Mortimer Broadley	Clarendon Road.

ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF TWO GUINEAS.

1	Armistead, Joseph John	Netherleigh, Roundhay,
2	Atkinson, J. H.	16, East Parade.
4	Bulmer, John	4, Winfield Mount, Potternewton Lane.
6	Croft, Samuel	Gledhow.
7	Garlick, William	6, Hyde Terrace.
8	Hewitt, E. W.	Harrogate.
9	Ikin, Joshua Ingham, F.R.C.S.	19, Park Place.
11	Ramskill, Josiah	13, Meadow Lane.
12	Scriven, William Clarkson	Normandy Villas, Chapeltown.
13	Stratten, Rev. J. R.	Park Square.
14	Sykes, Henry Marshall	Roundhay.
15	Wigram, Reginald	Headingley Hill.

NEW ORDINARY MEMBERS,

WITH AN ANNUAL SUBSCRIPTION OF ONE GUINEA.

1	Allbutt, T. Clifford, M.A., M.D., F.R.S., F.S.A.	Lyddon House, Virginia Road.
35	Armstrong, Prof. G. F., M.A.	24, Hyde Terrace.
2	Baines, Edward Manwaring	6, Ashwood Terrace, Headingley Hill.
3	Barr, Frederick Horatio	Mount View, Headingley Lane.
4	Barwick, J. M.	Low Hall, Yeadon.
5	Bedford, James E.	Woodhouse Cliff.
6	Benson, John	
7	Best, William Woodham	22, Lyddon Terrace.
8	Bolland, W. T.	West Wood Mount, Scarborough.
9*	Botterill, John	
10	Bousfield, Charles Edward	St. Mary's Mount.
11	Briggs, Riley	Springfield Mount.
12	Carbutt, E. H., M.P.	
13	Carter, Robert Meek	Woodhouse Lane.
14	Corson, George	Headingley.

15	Dawson, Edwin	
16	Denny, T. G.	Victoria Road, Headingley.
17	Dixon, J. W.	5, Cavendish Road.
19	Eddison, Frederick	The Manor, Adel.
20	Eddison, Robert William	Adel.
21	Firth, William	Burley Wood House.
22	Ford, J. Rawlinson	Shaw Lane, Headingley.
23	Ford, T. B. P.	Bentham, near Lancaster.
24	Gascoigne, F. C. Trench	Parlington Park, near Garforth.
25	Green, Prof. A. H., M.A.	14, Ashwood Villas, Headingley.
26*	Greenwood, Thomas	
27	Hargrave, John	St. Ann's Lodge, Burley, near Leeds.
28	Hepper, John	Clareville, Headingley.
80	Holmes, Joseph	Crown Chemical Works, Crown Street.
29	Holt, Henry Percy, C.E., F.G.S.	Fairlea, Headingley.
30	Holt, Joseph (P)	Ogbeare Hall, Holsworthy, Devon.
31	Illingworth, William	Armley.
32*	Irwin, Edwin	
33	Irwell, Julius	Highfield House, Headingley.
34	Jackson, Rev. Edward, M.A.	9, Brunswick Place, North Street.
37	Kemplay, Miss	St. John's Place.
86	Lambert, Joseph	Rose Court, Headingley Lane.
38	Lawson, Thomas	Potternewton.
39	Lawson, John	The Manor, Bramhope, Otley.
41	Ledgard, Mrs.	Eller Close, Roundhay.
88	Ledgard, Albert G., M.A.	Grosvenor Terrace, Headingley.
42	Lupton, Joseph	Armley.
44	McCheane, Rev. J. H., M.A.,	Trinity Parsonage, Hyde Terrace.
43	Manning, H. J.	The Lawn, Hampstead Heath, London, N.W.
40	Marshall, Prof. John, M.A.,	6, Spring Road, Headingley.
45	March, George	Oaklands, Scarcroft.
61	Mason, Charles Letch	Park Row.
46	Middleton, John William	Headingley.
47	Morley, Herbert Ogle	

48	Myers, William Beswick	13, Park Square.
49	Myers, W. C.	Grove House, Roundhay.
50	Nelson, Henry	St. John's Cottage, St. John's Road.
51	Nunneley, Thomas	9, Beech Grove Terrace.
52	Nussey, George Henry	St. Ann's, Burley, near Leeds.
53	Nussey, Obadiah	Morley House, Headingley.
54	Nussey, Thomas	Virginia House, Headingley Hill.
55	Nussey, Samuel Leathley	Potternewton Hall.
56	Nussey, Peter	Spring Ville, Shaw Lane, Headingley.
58	Peel, Mrs.	Ackworth Park, Pontefract.
59	Ramsbotham, S. H., M.D.	16, Park Place.
60	Rayner, John	Moorfield Lodge, Headingley.
62	Riley, H. W.	Alma House, Headingley.
63*	Robinson, R. H.	
64*	Robinson, Richard.	
65	Rücker, Prof. A. W., M.A.	3, Moorland Terrace.
89	Schunck, Mrs. Ed.	Gledhow Wood.
66	Sharpe, Miss	21, Victoria Place, Camp Road.
68	Smith, William Farrar	Hope Villa, Woodhouse Lane.
69	Smith, John Edward	9, Pancras Lane, Queen Street, Cheapside, London.
70	Somers, Francis	Fountain Terrace.
71	Stables, James	Horsforth.
74	Temple, Rev. Henry, M.A.	St. John's Vicarage, Woodhouse Lane.
36	Tennant, John	18, Albion Street.
18	Thornton, Charles	8, Blenheim Terrace.
76	Thorpe, Prof. T. E., Ph.D., F.R.S.	Headingley.
77	Titley, Anthony	Manor House, Victoria Grove, Headingley.
78	Titley, T. A.	Gledhow.
79	Tottie, Mrs. J. W. (P)	Coniston Hall, Bell Busk, Leeds.
82	Walker, H. B.	Headingley Hill.
83	Ward, Edmund	Denison Hall, Hanover Square.
57	Ward, George, F.C.S.	Buckingham Terrace, Headingley.
84*	Whiteley, Thomas.	

85 Willson, J. J. . Newton Grove.
87*Young, John.

ANNUAL SUBSCRIBERS OF ONE GUINEA.

Abbott, James	Woodhouse Lane.
Almond, Geo. Spedding	Westgate, Dewsbury.
Ambler, T.	9, Park Place.
Appleyard, T. W., jun.	8, De Grey Road.
Armistead, Edwin	Albion Street.
Armistead, J. W.	Rugby House, Meanwood Road.
Asquith, John Robert	Bond Place.
Atkinson, Miss	Clarendon Road.
Atkinson, Law	Clarendon Road.
Barran, Charles	3, Mount Terrace, Chapel-Allerton.
Barran, John, jun.	St. Mary's Mount, Newton Hill.
Barran, A.	Chapel Allerton Hall.
Barran, Rowland Hirst	Chapel Allerton Hall
Bartholomew, W. H., C.E.	Ridge Way House.
Battye, R. C.	Newton Grove.
Battye, C.	North Lane, Headingley.
Beverley, Robert	Woodsley Terrace.
Birchall, Oswald	Ilkley.
Bland, Miss	Lilford House, Queen Square.
Braithwaite, Richard Hale	Clarendon Road.
Brigg, Matthew A.	Oak Bank, Headingley.
Brigg, Thomas S.	Do.
Brigg, E. Newsome	Do.
Browne, J. C.	48, Briggate.
Bruce, William	Moorland Terrace.
Buckley, J. C.	10, Blenheim Terrace.
Buckton, Richard	Wheatfield Lodge, Headingley.
Bulmer, Charles	Blenheim Lodge.
Butler, Edmund	Riseholme, Horsforth.
Buxton, Travers	Regent Villas, Headingley.
Calvert, John P.	Bank View, Chapel-Allerton.

Campbell, Archibald	23, Hyde Terrace.
Chatwin, E. W.	1, Willow Grove Road.
Cheetham, W.	Woodbottom Cottage, Horsforth.
Chorley, R.	30, Edwin Road.
Churton, Thomas, M. D.	Park Square.
Clare, W., M.D.	Do.
Clark, Miss	Potternewton Hall.
Clarke, Thos. Robt.	Newton House, Spencer Place. New Leeds.
Coates, James Irwin, F.R.A.S.	Southend, Headingley.
Coleman, Henry W.	Armley.
Conder, Rev. E. R., M.A.	1, Newton Grove, New Leeds.
Connon, J. W.	Park Row.
Cooke, William	Moorfield House, Moor-Allerton.
Combe, Rev. A. B., M.A.	H.M. Prison, Leeds.
Craig, Robert	49, Springfield Place.
Crampton, W. T.	Woodland View, Chapeltown.
Crawford, James	Chapel-Allerton.
Crawford, J. W.	Newton Lane.
Croysdale, John	4, Beech Grove Terrace.
Cuthbert, Fredk. Albert	163, Woodhouse Lane.
Davey, Henry	Rupert Lodge, Headingley.
Davis, Edward	Milton Lodge, Far Headingley.
Dawson, C.	Leeds Union Workhouse.
Dawson, William	Larchfield Mills, Hunslet Lane.
Dixon, Henry	6, De Grey Road.
Dobson, Joseph	Burley Lawn.
Douglas, John	The Grange, Seacroft.
Dufton, Arthur Wellesley	74, Springfield Place.
Dunne, Rev. E. N., B.A.	102, Beckett Street.
Ellison, James Edward	10, De Grey Road.
Fairley, Thomas, F.R.S.E.	8, Newton Grove.
Farrar, Abraham	115, Hyde Park Road.
Fenwick, Thomas	Allerton Hill, Chapel-Allerton.
Foster, George	Osmondthorpe.
Fraser, John	Grove House, Headingley.
Gane, Lawrence	East Parade.

Gaskell, George V.	Willow House, Chapeltown Road.
Goodall, Charles	Francis Street, New Leeds.
Granger, Charles	Newton Grove, Chapeltown Road.
Greene, John	Whinmoor, near Seacroft.
Hall, Frederick	St. Mark's Villas, Woodhouse Lane.
Hall, William	Headingley.
Hallilay, John	Burley Road.
Hamilton, R. W.	Cardigan Villas, Shaw Lane, Headingley.
Harding, T. W.	St. Ives, Headingley.
Harding, Anthony Robinson	Sefton House, Louis Street, New Leeds.
Hargrove, Rev. C., M.A.	Montpelier Terrace.
Hartnell, Wilson	30, Hyde Park Terrace.
Harvey, Thomas	Ashwood, Headingley Hill.
Hassé, A. B.	31, Commercial Street.
Hebblethwaite, A. R.	12, Blenheim Terrace.
Hewetson, H. B.	9, Hanover Square.
Hezmalhalch, Joseph	Thorner.
Hill, John William, M.A.	Lynton Villa, Mount Preston.
Hindle, J. E.	North Grange, Horsforth.
Hirst, J. A.	Adel.
Hobson, Frederick	49, Briggate.
Holgate, Benjamin, F.G.S.	3, Atkinson Street, Hunslet.
Holmes, John	Holmsted, Roundhay.
Horton, Ed. S.	Meanwood.
Humble, Richard	Woodhouse Lane.
Hurd, Samuel	Leopold Mount, Chapeltown Road.
Ingham, Frederick	Morris Wood, Kirkstall.
Ingham, Henry	Heaton Lodge, Wortley.
Jackson, Richard	Commercial Street.
Jackson, Miss	15, Eldon Place.
Jefferson, J. S.	15, York Place.
Jefferson, Peter	6, De Grey Terrace.
Jefferson, S., F.C.S.	17, Virginia Road.
Jepson, E. G.	8, Woodsley Terrace.

Jessop, T. R., F.R.C.S.	32, Park Square.
Jowitt, Miss	Woodfield, Newton Hill.
Joy, Lomas	Weetwood Mount.
Kettlewell, C. B.	38, Commercial Street.
Kirk, James	Killingbeck Hall.
Knott, Joseph	Aire and Calder Navigation Co., Dock Street.
Lambert, William	Oakfield, Headingley.
Land, R. T., M.D.	Leopold Street, New Leeds.
Lawson, Arthur T.	Beech Grove Hall.
Lawson, F. W.	Bramhope.
Lee, W.	45, Francis Street, New Leeds.
Leprince, A.	Park Square.
Lupton, Henry	The Elms, Chapel-Allerton.
Lupton, William W.	Newton Hill.
Matterson, Miss	Cavendish House.
Maude, Miss	Knowsthorpe House.
McGill, A. F., F.R.C.S.	Park Square.
Megson, J. C.	Spencer Place, New Leeds.
Meredith, S. R.	Park Place.
Meyer, Adolf	2, Brandon Villas, Chapeltown Road.
Middleton, William	Gledhow Grange.
Milne, S. Milne	Calverley House.
Motley, Francis	Mount Pleasant.
Moxon, John	Spencer Terrace, Louis Street, New Leeds.
Naylor, C. T.	Newton Lodge, Potternewton.
Naylor, G. F.	Bond Street, Wakefield.
Naylor, J. W.	Allerton House, Chapeltown.
Newstead, J. S.	Woodville, Horsforth.
Nichols, J. H.	Woodsley Lodge, St. John's Hill.
Pawson, A. H.	Lawn's House, Farnley, near Leeds.
Pawson, John Edward	Do.
Pearson, John Thomas	Weetwood Road, Far Headingley.
Pepper, J. E.	23, Mount Preston.
Pickering, John	Mount Preston.

Pickles, J. J.	68, Camp Road.
Pope, Edward	Farfield, Moor-Allerton.
Powell, William	13, Park Place.
Powell, William	Springfield Villa.
Ransome, Prof. Cyril, M.A.	The Yorkshire College.
Reid, T. Wemyss	Clarendon Road.
Rhodes, John H.	27, Park Square.
Richardson, J. N.	The Woodlands, Weetwood.
Rider, James	Pease's Buildings.
Robinson, Thomas	The Manor House, Farnley.
Robinson, Edmund	42, Park Square.
Rooke, Charles S.	Newton Hill, Potternewton.
Rooke, R. L.	Do.
Rowley, Walter, F.G.S.	South Milford.
Ryder, Charles	Westfield, Chapeltown.
Salt, George	Saltaire, near Bradford.
Scatcherd, Oliver	Virginia Road.
Seaton, Mrs.	Wintoun House, North Street.
Shackleton, Joseph	Wortley.
Shaw, Mrs.	St. Mark's Villa.
Simpson, Frank E.	Springfield Mount.
Slade, Robert	14, Springfield Mount.
Smith, Stephen Ernest	Oak Bank, Shaw Lane, Headingley.
Smith, Mrs. Henry	Highfield, Headingley.
Snowdon, Henry	12, Claypit Lane.
Spirett, T. A.	Roseberry House, Moor-Allerton.
Stables, Ashley	Horsforth.
Stables, Henry	Do.
Stringer, Mrs. J. W.	81, Hyde Park Road.
Sugden, Rev. E. H.	Headingley College.
Tetley, C. F., M.A.	Spring Road, Headingley.
Thompson, Vincent T.	High Royd, Belle Vue Road.
Thrippleton, John	2, Evaline Terrace, Burley, Leeds.
Tiffany, George John	17, Grove Terrace.
Trumble, H. G.	York Street.
Turner, Joseph	Spencer Place, New Leeds.
Walker, James	5, High Royd, Belle Vue Road.

Walker, Henry	Oak House, Headingley.
Walker, James	Newton Hill.
Walker, George	Do.
Walker, A. T.	Newton Grove.
Walker, William	Osmondthorpe Hall.
Walker, Edward	Elmwood Place.
Walker, Francis	Do.
Ward, William	Charlwall House, West Park, Harrogate.
Watson, Charles	Wanstead House, Burley.
West, Theodore	1, Carlton View, Carlton Hill.
Wheelhouse, C. G., F.R.C.S.	Hillary Place.
Whitehead, John	Newstead House, Spencer Place, New Leeds.
Whitham, Thomas	Bramhope, Otley.
Wild, Thomas	Woodville, Potternewton.
Willans, J. W.	2, Headingley Terrace.
Williamson, Henry	Newport House, Headingley.
Wright, Charles James	4, Park Square.
Yewdall, Edwin	40, Wade Lane.
Young, Rev. Robt. N.	Headingley College.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE.

Abbott, Mrs. J.	Woodhouse Lane.
Ambler, Mrs. T.	9, Park Place.
Atkinson, Mrs. E.	Eldon House, Woodhouse Lane.
Atkinson, Miss Emily	Clarendon Road.
Atkinson, Miss Eleanor S.	Do.
Barran, Mrs. John	Chapel-Allerton Hall.
Barran, Mrs. John, jun.	St. Mary's Mount, Newton Hill.
Barran, Mrs. Charles	3, Mount Terrace, Chapel-Allerton.
Bartholomew, Mrs.	Ridge Way House.
Bedford, Mrs. J.	Woodhouse Cliff.
Bedford, Miss	Do.

Beverley, Miss Emily	Woodsley Terrace.
Birchall, Mrs. Oswald	Kirkstall Grove.
Bland, Miss Mary J.	Lilford House, Queen Square.
Boyne, Miss	Charlwall House, West Park Harrogate.
Brigg, Miss Mary	Oak Bank, Headingley.
Bruce, Mrs. W.	Moorland Terrace.
Buckton, Mrs. R.	Wheatfield Lodge, Headingley.
Bulmer, Mrs. Charles	Blenheim Lodge.
Bulmer, Miss Ada	Do.
Butler, Mrs. Edmund	Riseholme, Horsforth.
Butler, Hugh	Kepstorn, near Leeds.
Butler, Bernard	Do.
Butler, R.	Do.
Butler, Miss Dora	Do.
Campbell, Mrs. A.	23, Hyde Terrace.
Cheetham, Miss E.	Woodbottom Cottage, Horsforth.
Churton, Mrs. T.	Park Square.
Clare, Mrs.	Do.
Clarke, Mrs. T. R.	Newton House, Spencer Place, New Leeds.
Clarke, Charles Henry	Do.
Coates, Mrs. J. I.	Southend, Headingley.
Coleman, Mrs. H. W.	Armley.
Connon, Mrs. J. W.	Park Row.
Cooke, Mrs. W.	Moorfield House, Moor-Allerton, near Leeds.
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Croysdale, Mrs. J.	4, Beech Grove Terrace.
Cuthbert, Miss Alice	163, Woodhouse Lane.
Davey, Mrs. Henry	Rupert Lodge, Headingley.
Davis, Mrs. E.	Milton Lodge, Far Headingley.
Dawson, Mrs. W.	Larchfield Mills, Hunslet.
Denny, Alfred	Victoria Road, Headingley.
Dixon, Miss	6, De Grey Road.
Douglas, Mrs.	The Grange, Seacroft.
Dunne, Mrs. E. N.	102, Beckett Street.

Ellison, Miss	10, De Grey Road.
Fairley, Mrs. T.	8, Newton Grove.
Farrar, Mrs. A.	115, Hyde Park Road.
Fenwick, Mrs. T.	Allerton Hill. Chapeltown.
Filliter, Miss	West Mount, Clarendon Road.
Fraser, H. J.	Grove House, Headingley.
Fraser, Miss	Do. do.
Garlick, Miss	6, Hyde Terrace.
Gaskell, Mrs.	Willow House, Chapeltown Road.
Gaskell, Miss	Do. do.
Granger, Mrs. C.	Newton Grove, Chapeltown Road.
Granger, E. H.	Do. do.
Granger, Miss	Do. do.
Granger, Miss Mary E.	Do. do.
Greene, Mrs. J.	Whinmoor, near Seacroft.
Greene, Miss	Do. do.
Hall, Mrs. F.	St. Mark's Villas, Woodhouse Lane.
Hall, Mrs. W.	Headingley.
Hamilton, Mrs. R. W.	Cardigan Villas, Shaw Lane, Headingley.
Harding, Mrs. A. R.	Sefton House, Louis Street, New Leeds.
Heaton, Miss Helen F.	Claremont.
Hebblethwaite, Miss S.	12, Blenheim Terrace.
Hepper, Miss	Clareville, Headingley.
Hewetson, Mrs. H. B.	9, Hanover Square.
Hill, Mrs. J. W.	Lynton Villa, Mount Preston.
Hirst, Mrs. J. A.	Adel.
Holgate, Miss E.	Oak House, Headingley.
Holgate, Mrs. B.	3, Atkinson Street, Hunslet.
Humble, Frederick	Woodhouse Lane.
Humble, Miss Alice	Do
Hunter, Miss E.	Bramhope, Otley.
Ingham, Jas. Curtis	Heaton Lodge, Wortley.
Ingham, Miss	Do. do.
Ingham, Mrs. Frederick	Morris Wood, Kirkstall.

Jefferson, Mrs. S.	17, Virginia Road.
Jefferson, Miss	15, York Place.
Jefferson, Miss M.	Do.
Jepson, Mrs. E. G.	8, Woodsley Terrace.
Jessop, Mrs. T. R.	32, Park Square.
Jowitt, Miss E. M.	Woodfield, Newton Hill.
Jowitt, Miss F.	Harehills Grove, Leeds.
Joy, Alfred	Weetwood Mount.
Joy, Mrs. Lomas	Do.
Joy, Miss	Do.
Lambert, Arthur	Oakfield, Headingley.
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Megson, Albert	Spencer Place, New Leeds.
Meyer, Mrs. A.	2, Brandon Villas, Chapeltown Road.
Middleton, Mrs. W.	Gledhow Grange.
Middleton, Miss	Do.
Myers, Miss	Cavendish House.
Myers, Miss	Grove House, Roundhay.
Myers, Miss Henrietta	Do. do.
Naylor, Mrs. Charles	Newton Lodge.
Naylor, Mrs. J. W.	Allerton House, Chapeltown.
Neale, Miss	102, Beckett Street.
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Nelson, Miss C. E.	Do. do.
Newstead, Mrs. J. S.	Woodville, Horsforth.
Nichols, Miss	Woodsley Lodge, St. John's Hill.
Nussey, Miss	Springville, Shaw Lane, Headingley.
Nussey, Miss M.	Do. do.
Passavant, Miss	De la Haye House, Chapeltown Road.
Passavant, Miss L. M.	Do. do.
Passavant, Miss Fanny	Do. do.
Passavant, Miss Alice	Do. do.

Payne, E. S.	13, Briggate.
Peek, Miss	Abbey Gorse, Kirkstall.
Pepperell, Miss	Manor House, Farnley.
Pope, Mrs. Edwd.	Farfield, Moor-Allerton.
Pope, Miss	Do. do.
Ralls, Miss	Lilford House, Queen Square.
Ralph, Mrs. John	Lifton House.
Reynolds, Miss	Cliff Lodge, Hyde Park.
Richardson, Miss	The Woodlands, Weetwood.
Richardson, Miss Lilly	Do do.
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Robinson, Miss	The Manor House, Farnley.
Robinson, Mrs. E.	Park Square.
Rooke, Miss	Newton Hill, Potternewton.
Rooke, Miss E. M.	Do. do.
Rowley, Mrs. Walter	South Milford.
Russell, Miss	Ridge Way House, Headingley.
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Ryder, C. F.	Do. do.
Ryder, Miss. E. A.	Do. do.
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Taylor, Mrs. S.	Hyde Terrace.
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Teale, Lionel Henry	Do. do.
Teale, Michael	Do. do.
Tetley, Mrs. C. F.	Spring Road, Headingley.
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Walker, Mrs. Henry	Oak House, Headingley.
Walker, Tom	Do. do.
Walker, Miss M. J.	Newton Hill.
Walker, Miss M. H.	Do.
Walker, Miss E. H.	Do.
Walker, Miss	Newton Grove.
Walker, Miss M. L.	Do.
Walker, F. W.	Do.
Walker, Mrs. William	Osmondthorpe Hall.
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Walker, Miss Adeline	Do. do.
Walker, Herbert	Do. do.
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Wheelhouse, Mrs. C. G.	Hillary Place.
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Wild, Hy. Watkins	Do. do.
Wild, Frank Percy	Do. do.
Wilkinson, W. Musgrave	St. Mary's Mount, Newton Hill.
Williamson, Mrs. H.	Newport House, Headingley Gardens.
Williamson, Miss	Do. do.
Williamson, Harry	Do. do.
Williamson, James	Do. do.

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Every person desirous of bequeathing to the Society any sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following Form:—

I give and bequeath to the Trustees for the time being of the Society established at Leeds, called "THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY," *for the use of the said Society, the sum of* , *to be paid out of such part of my personal Estate as I may legally charge therewith.* [Or here enumerate the Effects or Property intended to be bequeathed.] *And I direct that the Receipt of the Treasurer of the said Society for the time being shall be an effectual discharge to my Executors for the said Legacy.*

APPENDIX.

THE following short notes on Birds in the Clapham Collection are prepared from information supplied by the donor, whose remarks, when quoted verbatim, are indicated by inverted commas.

The transactions of the Yorkshire Naturalists' Union (Series B, Vertebrata) may be usefully consulted for further particulars respecting these and other species occurring in the county.

Notes on the Milner Collection are in preparation, but are unavoidably deferred to a succeeding Report.

⁂ The numerals indicate the number of specimens of each species, and the capital letters correspond to those marked on the cases.

THE CLAPHAM COLLECTION OF BIRDS OF PREY.

GOLDEN EAGLE (*Aquila chrysaëtus*).—1. "This is a Scotch example." [C]

SPOTTED EAGLE (*Aquila nævia*).—1. Shot on the Archbishop of Armagh's Estate, Armagh, July 4th, 1871. [C]

WHITE-TAILED EAGLE, OR ERNE (*Haliaëtus albicilla*).—1. "Killed at Castle Howard." [O]

OSPREY (*Pandion haliaëtus*).—1. "A North American Specimen." [X]

GREENLAND FALCON (*Falco grœnlandicus*).—5. "Foreign specimens." "Most of these birds [Greenland and Iceland Falcons] were shot or procured by the late David Graham, of York, when he accompanied the late Sir William Milner, as Naturalist, to Iceland." [C (1) D (3) Z (1)]

ICELAND FALCON (*Falco islandus*).—7. Except two, these are foreign specimens. In case B is an immature male (?) shot on Filey Brigg, Oct. 4, 1864 (one of a pair seen; the other escaped), and a strong bird (a young female) resembling the Common Buzzard in plumage, killed at Poppleton, near York, Nov., 1860. [B (2) D (1) E (4)]

PEREGRINE FALCON (*Falco peregrinus*).—5. An adult female, shot on the Cliff north of Scarborough Castle; an adult male, shot on Filey Brigg; two immature birds (Scotland); and a small and peculiar bird at the bottom of the case, resembling the Lanner (*Falco lanarius*), which was shot on Scarborough Mere. [F]

HOBBY (*Falco subbuteo*).—4. "Yorkshire birds." [A]

RED-FOOTED FALCON (*Falco rufipes*).—6. The bird in case G "was

trapped near to Scarborough. Lord Londesborough's keepers have taken one, if not two others." The birds in case P are believed to be foreign examples. [G (1) P (5)]

MERLIN (*Falco æsalon*).—5. "Yorkshire birds." [A]

KESTREL (*Falco tinnunculus*).—7. One of the birds in case X is "a very curious adult dwarf, killed on Strensall Common, near York." The others, with one exception, are Yorkshire birds. [H (2) X (5)]

GOS-HAWK (*Astur palumbarius*).—8. The birds in case H, viz., adult male and female, young female, and young, shewing the change from first to second year's plumage, are foreign. Case G contains a "young male in cuckoo plumage, killed on Leckton Moor, near Pickering; an adult female (?), Mowbraydale, Malton"; an adult female, shot at Wykeham; and a second, trapped on a rabbit warren, near Harrogate, April 15, 1871. [G (4) H (4)]

SPARROW-HAWK (*Accipiter nisus*).—31. In case R are nine females, "mostly of the large type, some of which strongly resemble Sharpe and Dresser's Swiss form. The cream-coloured bird is one of three, all in similar plumage, which were killed in Perthshire." The bird with a very light-coloured tail is from Sherwood Forest. The rest are Yorkshire birds. Case S contains ten males, "several of which are in the plumage of Lord Huntley's variety." The collection of sparrow-hawks is of great interest from the variety in size and plumage of the specimens. [Q (12) R (9) S (10)]

KITE (*Milvus vulgaris*).—2. "One bird is Yorkshire, the other foreign." [I]

SWALLOW-TAILED KITE (*Nauclerus furcatus*).—2. "The finest specimen is North American. The one with white on the back is a Yorkshire bird." The following is a copy of a memorandum made at the time of capture by Mr. Jonathan Taylor, of Harum, near Helmsley, and certified by him to relate to the bird in the Clapham Collection:

"May 25th, 1859.—Little George (the name by which the keeper was always known at Duncombe Park) brought me to-day a Swallow-tailed Kite, shot by himself in the Quarry Banks, near Helmsley, on the estate of Lord Feversham. JONATHAN TAYLOR."

[I]

COMMON BUZZARD (*Buteo vulgaris*).—5. Five examples, viz., two rather dark birds (Yorkshire), one light-coloured (Cromarty), a second light-coloured (Germany), and a small dark bird taken alive on Scarborough Mere. [K]

[illegible] Buzzard (*Buteo lagopus*).—[illegible] "The two upper birds, a light-coloured pair, were killed by Mr Beswick of Gosbirgh. [illegible] The other two birds are foreign." [illegible]

Rough-legged Buzzard (*Buteo lagopus*).—[illegible] "The middle bird in a mixed-white plumage is an English specimen: the brown bird was killed near Darlington: the others are foreign." [illegible]

Marsh-Harrier (*Circus aeruginosus*).—2. The locality of the example in case X is not known. The bird in case W is from [illegible] [illegible]

Hen-Harrier (*Circus cyaneus*).—4. The three specimens in case N are foreign: the others are Yorkshire birds. [X 1, young. N 3.]

Montagu's Harrier (*Circus Montagui*).—2. "The pair in case W were killed on Cotcliff Moor, and the young and eggs were taken at the same time." One or two of those in case N were killed near Selby. The remainder are foreign: two exhibit the dark brown plumage met with occasionally in this species. [N 3. T 1. V 1. W 1.]

Snowy Owl (*Surnia nyctea*).—2. The bird in case O was shot on Barton Moor, Feb. 19, 1871. [O.U.]

Short-eared Owl (*Otus brachyotus*).—1. [U.]

Eagle Owl (*Bubo maximus*).—1. [U.]

Scops Owl (*Scops Aldrovandi*).—2. [U.]

The following species in the Clapham Collection are not British:—

Saker (*Falco sacer*), 1 [F]; Lanner (*Falco lanarius*), 2 [F]; *Tinnunculus sparverius*, 1 [T].

In addition to the Birds of Prey, Mr. Clapham's donations include examples of the following species:—

Great Grey Shrike (*Lanius excubitor*), 2; Red-backed Shrike (*Lanius collurio*), 3; Pied Flycatcher (*Muscicapa atricapilla*), 1; Golden Oriole (*Oriolus galbula*), 2; Blackbird (*Turdus merula*), 1; Black Redstart (*Ruticilla titys*), 1; Greater Whitethroat (*Curruca cinerea*), 1; Bluethroat (*Ruticilla suecica*), 3; Yellow Wagtail (*Motacilla Rayi*), 1; Rock Pipit (*Anthus obscurus*), 2; Waxwing (*Bombycilla garrula*), 2; Mountain Finch (*Fringilla montifringilla*), 3; Siskin (*Carduelis spinus*), 2; Bullfinch (*Loxia pyrrhula*), 1; Hoopoe (*Upupa Epops*), 2; Roller (*Coracias garrula*), 1; Bee-eater (*Merops apiaster*), 2; Kingfisher (*Alcedo ispida*), 1; Great Bustard (*Otis tarda*), 1 [Y]; Ringed Plover (*Charadrius hiaticula*), 1.

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